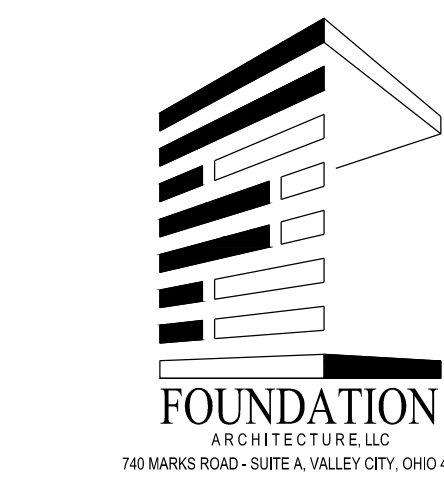
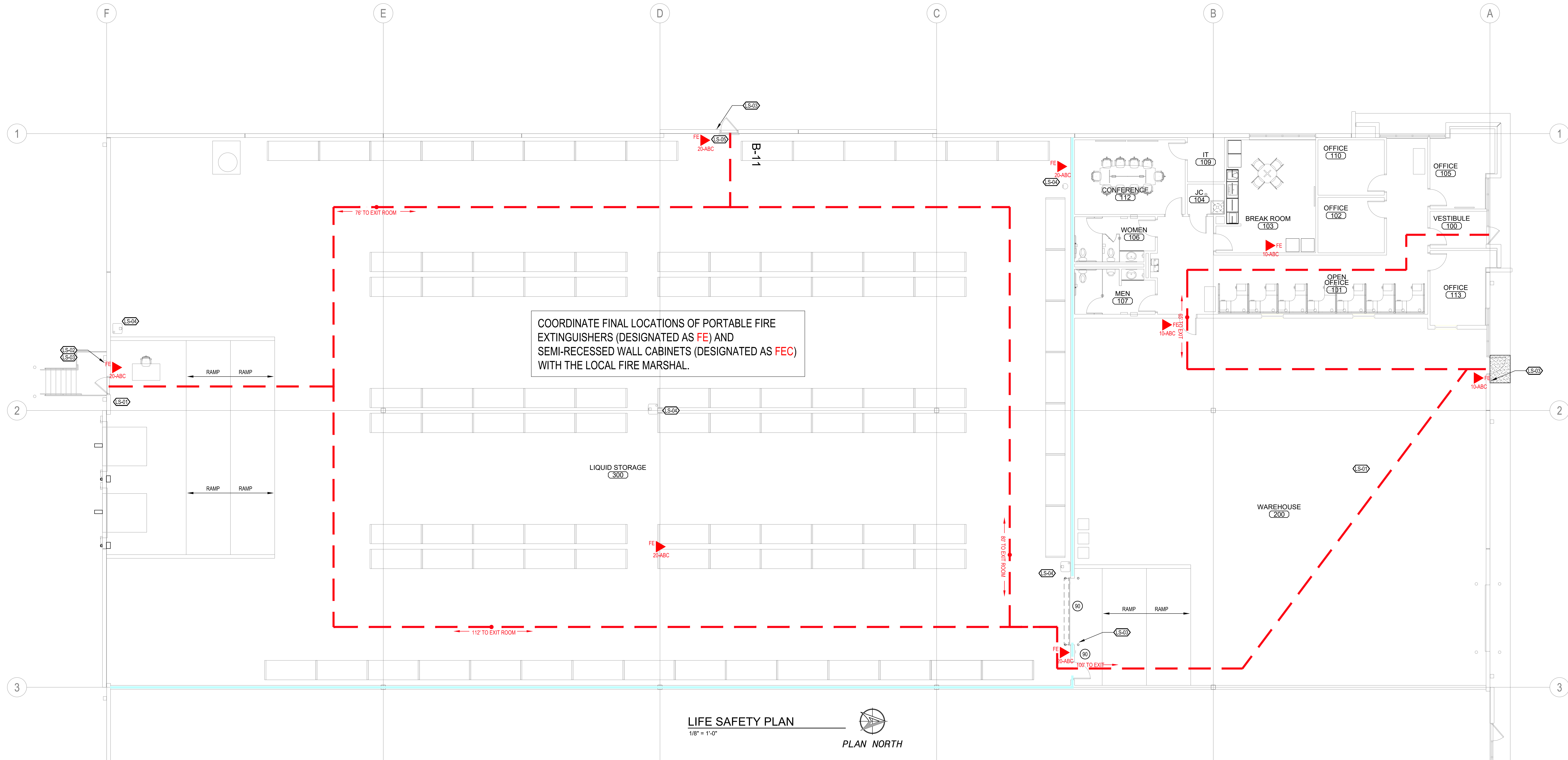




PROJECT:

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064



LIFE SAFETY PLAN
1/8" = 1'-0"
PLAN NORTH

LIFE SAFETY PLAN GENERAL NOTES	LIFE SAFETY PLAN SYMBOL LEGEND	LIFE SAFETY PLAN KEY NOTES
1. PROVIDE PORTABLE FIRE EXTINGUISHERS PER LOCAL BUILDING CODES AND NFPA 10 STANDARDS. MAXIMUM TRAVEL DISTANCE TO FIRE EXTINGUISHER NOT TO EXCEED 75' 50' IN LIQUID STORAGE ROOM.	2 HOUR FIRE-RATED WALL ASSEMBLY COORDINATE CONDITIONS WITH FLOOR PLAN AND WALL TYPES SHEETS	EXISTING EXIT SIGNS TO REMAIN. EXISTING WAREHOUSE / MANUFACTURING AREA PATH OF TRAVEL LESS THAN 250' MAINTAINED THROUGHOUT. NEW WORK SHALL NOT AFFECT EXISTING TRAVEL DISTANCES.
2. COORDINATE FINAL LOCATIONS OF PORTABLE FIRE EXTINGUISHERS (DESIGNATED AS FE) AND SEMI-RECESSED WALL CABINETS (DESIGNATED AS FEC) WITH THE LOCAL FIRE MARSHAL.	EXISTING SWING DOOR AND FRAME TO REMAIN	KNOX BOX
3. PORTABLE FIRE EXTINGUISHERS SHALL BE 10 LB. CLASS ABC.	NEW SWING DOOR AND FRAME	NFPA 704 PLACARD TO BE PLACED AT DOOR
3a. PORTABLE FIRE EXTINGUISHERS SHALL IN LIQUID STORAGE ROOM TO BE BE 20 LB. CLASS ABC.	FIRE RATING FOR DOOR AND FRAME IN MINUTES	EMERGENCY EYE WASH
4. FIRE EXTINGUISHER CABINETS SHALL COMPLY WITH APPLICABLE LOCAL STATE AND ACCESSIBILITY CODES.	PATH OF EGRESS WITH TRAVEL DISTANCE FROM FURTHEST POINT	PROVIDE AND INSTALL NEW PIG, BUILD-A-BERM, SELF-RISING DRIVE-OVER BARRIER
5. FIRE EXTINGUISHER CABINETS SHALL BE FIRE RATED WHEN INSTALLED IN FIRE RATED WALLS (TYP).	PORTABLE FIRE EXTINGUISHER (WITH WALL MOUNTING BRACKET, UNLESS NOTED OTHERWISE). COORDINATE WITH LIFE SAFETY GENERAL NOTES / THIS SHEET	
6. FIRE EXTINGUISHER MOUNTING HEIGHTS SHALL COMPLY WITH ANSI A117.1 REQUIREMENTS.		

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LIFE SAFETY PLAN

PROJECT

TENANT IMPROVEMENTS FOR:

SONNY'S

2201 NE TOWN CENTRE BOULEVARD
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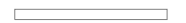
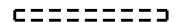
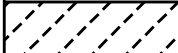
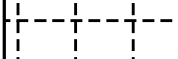
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DEMOLITION PLAN**

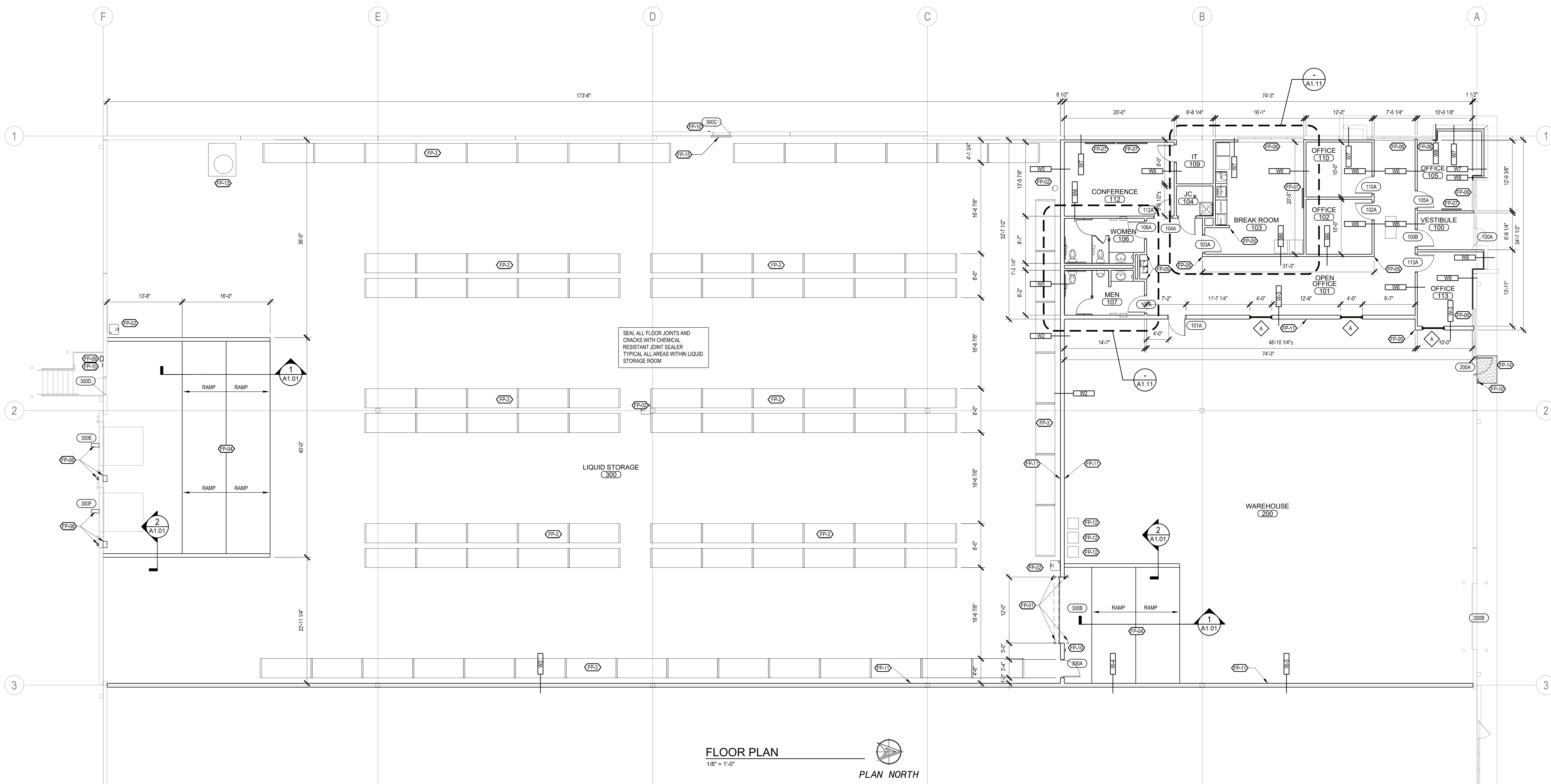
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DEMOLITION PLAN

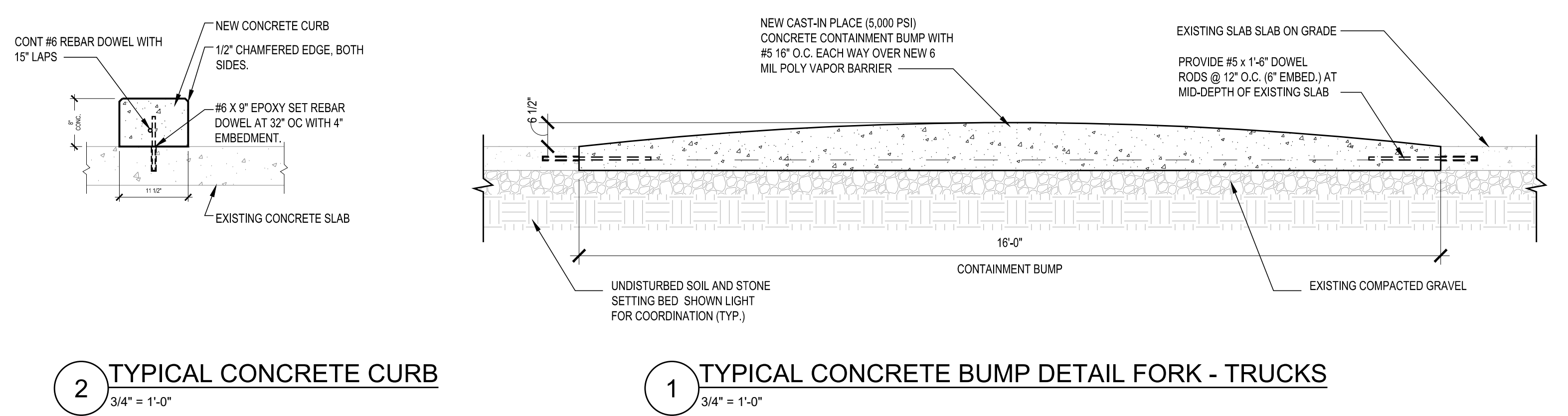


PLAN NORTH

DEMOLITION KEY NOTES		DEMOLITION PLAN LEGEND		GENERAL DEMOLITION NOTES:	
	REMOVE EXIT DEVICE, SEE DOOR HARDWARE FOR REPLACEMENT		EXISTING WALL TO REMAIN	1.	<u>FIELD VERIFY EXISTING CONDITIONS/DIMENSIONS PRIOR TO START OF WORK.</u>
	SAWCUT FLOOR FOR NEW CONTAINMENT BUMP. COORDINATE DIMENSIONS WITH NEW WORK.		EXISTING WALL TO BE REMOVED	2.	PROVIDE DEMOLITION AS INDICATED ON DRAWINGS AND AS REQUIRED, TO COMPLETE THE WORK SHOWN.
	REMOVE PORTION OF EXISTING STOREFRONT WINDOW SYSTEM TO INSTALL NEW EXIT DOOR.		EXISTING SWING DOOR AND FRAME TO REMAIN	3.	DEMOLITION DIMENSIONS ARE TO BE FIELD VERIFIED AND COORDINATED WITH FLOOR PLAN INFORMATION.
			EXISTING SWING DOOR AND FRAME TO BE REMOVED	4.	PROVIDE CUTTING AND PATCHING OF EXISTING WALLS, FLOORS AND CEILINGS AS REQUIRED TO ACCOMMODATE NEW LAYOUT. PATCH TO MATCH EXISTING ADJACENT WALLS, FLOORS AND CEILINGS FOR SMOOTH EVEN APPEARANCE, UNLESS OTHERWISE NOTED.
			SAWCUT AND REMOVE FLOOR SLAB	5.	PROVIDE SHORING/BRACING AS REQUIRED AT AREAS OF DEMOLITION. STRUCTURE SHALL BE SELF-SUPPORTING AFTER DEMOLITION IS COMPLETE.
			REMOVE EXISTING CEILING	6.	COORDINATE EXTENT AND DISPOSITION OF ALL SALVAGEABLE ITEMS WITH OWNER.
				7.	COORDINATE ASPECTS OF DEMOLITION PLAN WITH NEW FLOOR, EQUIPMENT AND REFLECTED CEILING PLANS, AS WELL AS MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
				8.	REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED DURING CONSTRUCTION AND RENOVATION TO THE BUILDING.
				9.	EXISTING FIRE DEPARTMENT VEHICLE ACCESS SHALL BE MAINTAINED DURING CONSTRUCTION.
				10.	FIRE RATED ASSEMBLIES DISRUPTED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL RATING OR BETTER.
				11.	ANY NEW PENETRATIONS TO A FIRE RATED ASSEMBLY SHALL BE CONSTRUCTED ACCORDING TO AN UL ASSEMBLY MATCHING THE RATING OF THE ASSEMBLY BEING PENETRATED.



TENANT IMPROVEMENTS FOR:
SONNY'S
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LEE'S SUMMIT, MISSOURI 64064



FLOOR PLAN KEY NOTES		FLOOR PLAN LEGEND		FLOOR PLAN GENERAL NOTES	
FP-01	4" DIA CONCRETE FILLED GUARD POST	FP-10	NEW 4" REINFORCED CONCRETE WALK, EXTEND TO PAVEMENT	1.	FIELD VERIFY EXISTING CONDITIONS/DIMENSIONS PRIOR TO START OF WORK.
FP-02	NEW EMERGENCY EYE WASH STATION; REFER TO PLUMBING DRAWINGS	FP-15	PROVIDE AND INSTALL NEW PIG, BUILD-A-BERM, SELF-RISING DRIVE-OVER BARRIER	2.	REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED DURING CONSTRUCTION AND RENOVATION TO THE BUILDING.
FP-03	NEW STORAGE RACKING SYSTEM TO BE PROVIDED AND INSTALLED BY RACKING SUPPLIER; LAYOUT SHOWN FOR COORDINATION ONLY			3.	EXISTING FIRE DEPARTMENT VEHICLE ACCESS SHALL BE IDENTIFIED AND MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
FP-04	NEW CAST-IN PLACE CONCRETE CONTAINMENT BUMP			4.	REFER TO CIVIL DRAWINGS FOR SITE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: SIGNAGE, SIDEWALKS, CURBS, SITE SIGNAGE, IRRIGATION AND STORM WATER MANAGEMENT.
FP-05	4'-0" CORNER GUARD PROTECTION, MATCH WALL COLOR			5.	ALL DOOR OPENINGS ARE TO BE LOCATED 6" FROM INTERIOR CORNER OF WALL UNLESS NOTED OTHERWISE.
FP-06	PROVIDE SOLID SURFACE WINDOW SILL			6.	VERIFY ALL ROUGH OPENINGS FOR NEW DOORS AND WINDOWS WITH MANUFACTURERS REQUIREMENTS.
FP-07	TV BY OWNER			7.	COORDINATE LOCATIONS OF FIRE EXTINGUISHERS AND SEMI-RECESSED WALL CABINETS WITH LIFE SAFETY PLAN ON SHEET G0.02.
FP-08	INSTALL NEW TRAILER RESTRAINT, SIGNAL LIGHT & CONTROL PANEL SIMILAR OR EQUAL TO STAR 4 VEHICLE RESTRAINT MFR'D BY KELLY.			8.	COORDINATE ALL FLOOR DRAIN LOCATIONS WITH THE PROJECT PLUMBING DRAWINGS.
FP-09	INSTALL KNOX BOX				
FP-10	INSTALL NFPA 704 PLACARD TO BE PLACED AT DOOR				
FP-11	PAINT 2 ON WALLS				
FP-12	CHARGERS, SEE ELECTRICAL				
FP-13	SCALE/WRAPPER BY OWNER				

SEAL



PROJECT:

TENANT IMPROVEMENTS FOR:

SONNY'S

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DRAWING TITLE:
ENLARGED PLANS

SHEET #:

A1.11

TOILET ROOM ACCESSORIES

- GB18 18" VERTICAL LONG X 1-1/2" DIA. GRAB BAR WITH PEENED SURFACE
-BOBRICK B-680X18
- GB42 42" LONG X 1-1/2" DIA. GRAB BAR WITH PEENED SURFACE
-BOBRICK B-680X42
- GB48 48" LONG X 1-1/2" DIA. GRAB BAR WITH PEENED SURFACE
-BOBRICK B-680X48
- HDB-1 SURFACE MOUNTED HAND DRYER
-XCELERATOR MODEL XL-SB
- HKC-1 CLOTHES HOOK WITH BUMPER
-BOBRICK B-212
- MIR-1 24" WIDE X 36" HIGH STAINLESS STEEL FRAMED MIRROR
-BOBRICK B-185-2436
- MOP-1 MOP & BROOM HOLDER (24" LONG W/4 HOLDERS)
-BOBRICK B-223X24
- NAP-1 SURFACE MOUNTED FEMININE NAPKIN DISPOSAL
-BOBRICK B-270
- PT-3 RECESSED PAPER TOWEL DISPENSER/WASTE RECEPTACLE
-BOBRICK B-3844
- SD-1 WALL MOUNTED SOAP DISPENSER
-BOBRICK B-4112
- TP-1 SURFACE MOUNTED DUAL ROLL TOILET TISSUE DISPENSER
-BOBRICK B-3588

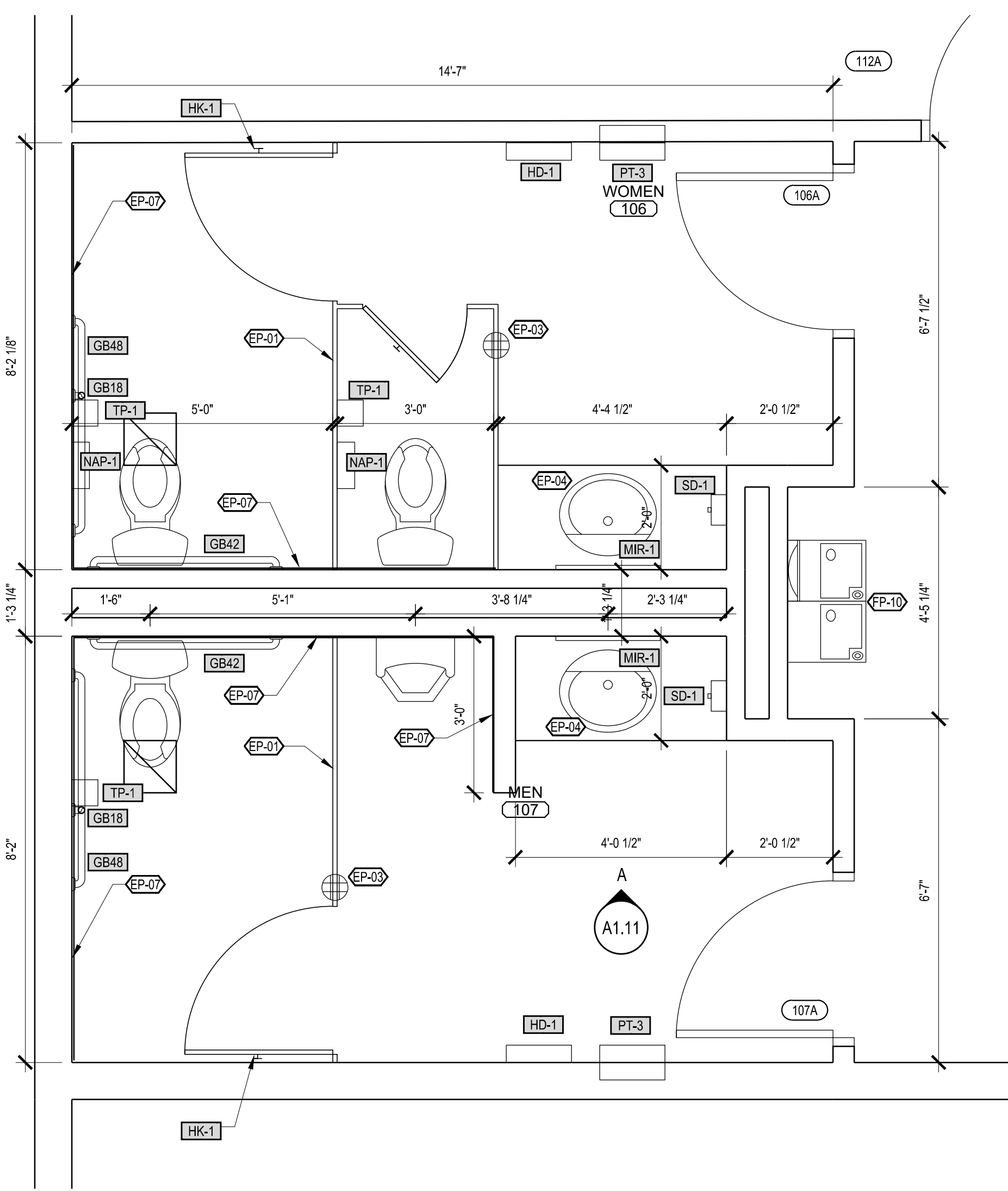
ACCESSORY NOTES

- CONTRACTOR TO PROVIDE AND INSTALL FIRE-RETARDANT TREATED WOOD BLOCKING IN WALLS FOR THE ATTACHMENT OF ACCESSORIES AS REQUIRED.
- ALL ACCESSORIES SHALL BE MOUNTED PER THE MANUFACTURER'S RECOMMENDATIONS AND PER ADA REQUIREMENTS.

FLOOR PLAN KEY NOTES

- EP-01 VENDING MACHINES BY OWNER
- EP-02 TRASH RECEPTACLE BY OWNER
- EP-03 FURNITURE BY OWNER
- EP-04 TV BY OWNER
- EP-05 ICE BY OWNER
- EP-06 REFRIGERATOR BY OWNER
- EP-07 MICROWAVE BY OWNER
- EP-08 COFFEE BY OWNER
- EP-09 CORNER GUARD PROTECTION, MATCH WALL COLOR.
- EP-10 HILLO ELECTRIC WATER COOLER WITH BOTTLE FILLER
- EP-11 UNDER CABINET REFRIGERATOR BY OWNER
- EP-12 INSTALL 4" FRP PANEL

- EP-01 1" THICK, FLOOR MOUNTED, WALL BRACED, BAKED ENAMEL, TOILET PARTITION WITH COAT HOOK AND RUBBER STOP ON STALL SIDE OF DOOR
- EP-02 FLOOR DRAIN, COORD WITH PLUMB DWGS.
- EP-03 SOLID SURFACE COUNTER TYPE LAVATORY - SEE ELEVATION SECTIONS A, B, AND C THIS SHEET
- EP-04 MOP SINK - COORD. WITH PLUMB. DWGS.
- EP-05 WATER HEATER - COORD. WITH PLUMB. DWGS.
- EP-06 4'-0" HIGH F.R.P. PANELING (WHERE INDICATED)

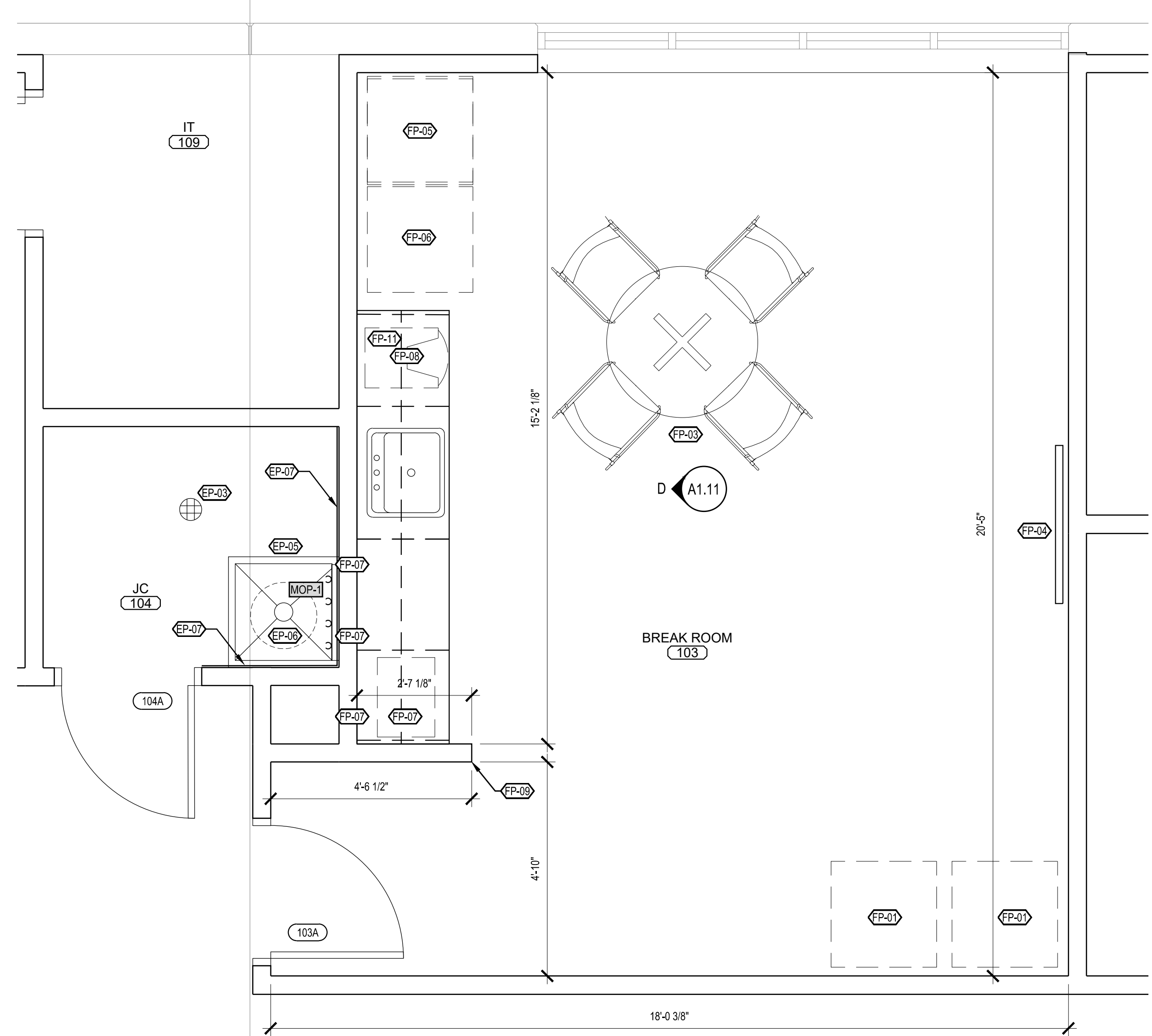


ENLARGED TOILET ROOM PLAN

1/2" = 1'-0"



PLAN NORTH



ENLARGED BREAK ROOM PLAN

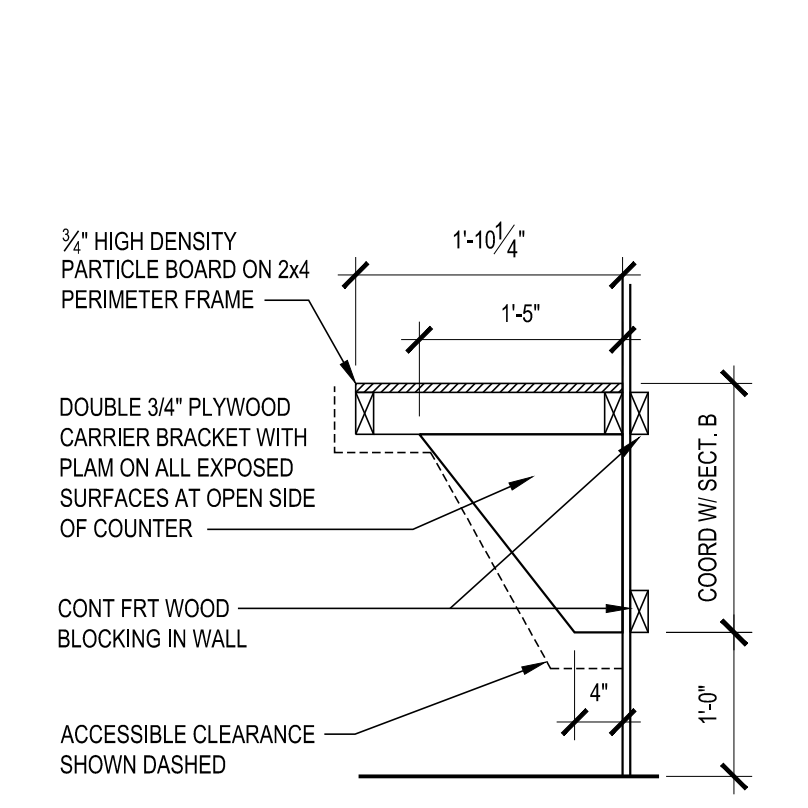
1/2" = 1'-0"



PLAN NORTH

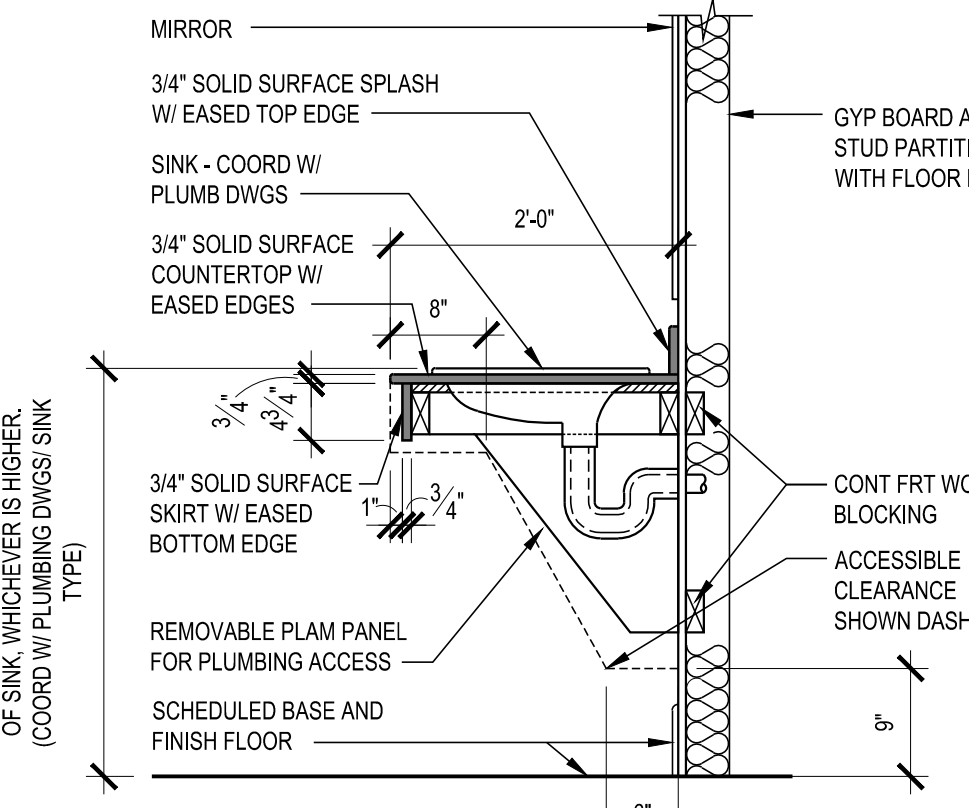
FLOOR PLAN LEGEND

	EXISTING WALL TO REMAIN
	NEW WALL - COORDINATE WITH WALL SECTIONS OR WALL TYPES
	EXISTING SWING DOOR AND FRAME TO REMAIN
	NEW SWING DOOR AND FRAME
	DOOR TAG: COORDINATE WITH DOOR SCHEDULE
	WINDOW TAG: COORDINATE WITH WINDOW TYPES ON SHEET A6.01



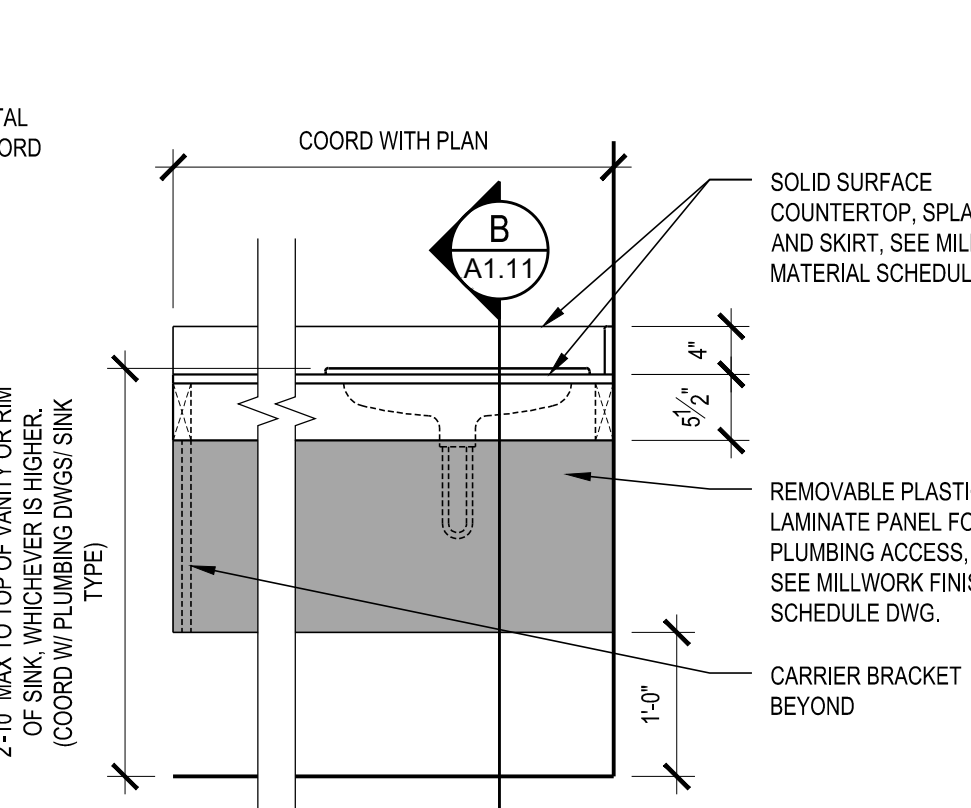
C COUNTER SUPPORT DETAIL

3/4" = 1'-0"



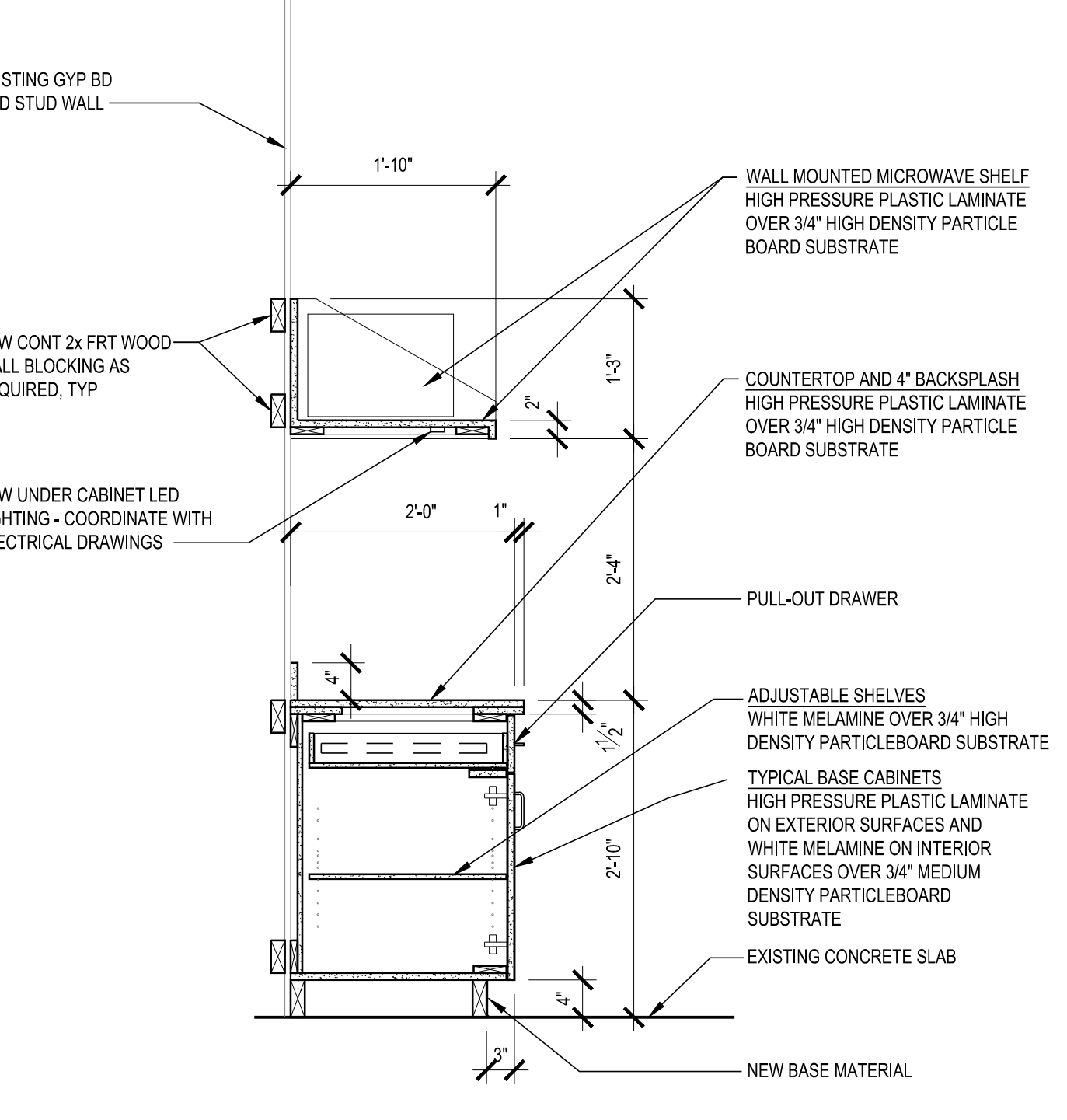
B LAVATORY COUNTER SECTION

3/4" = 1'-0"



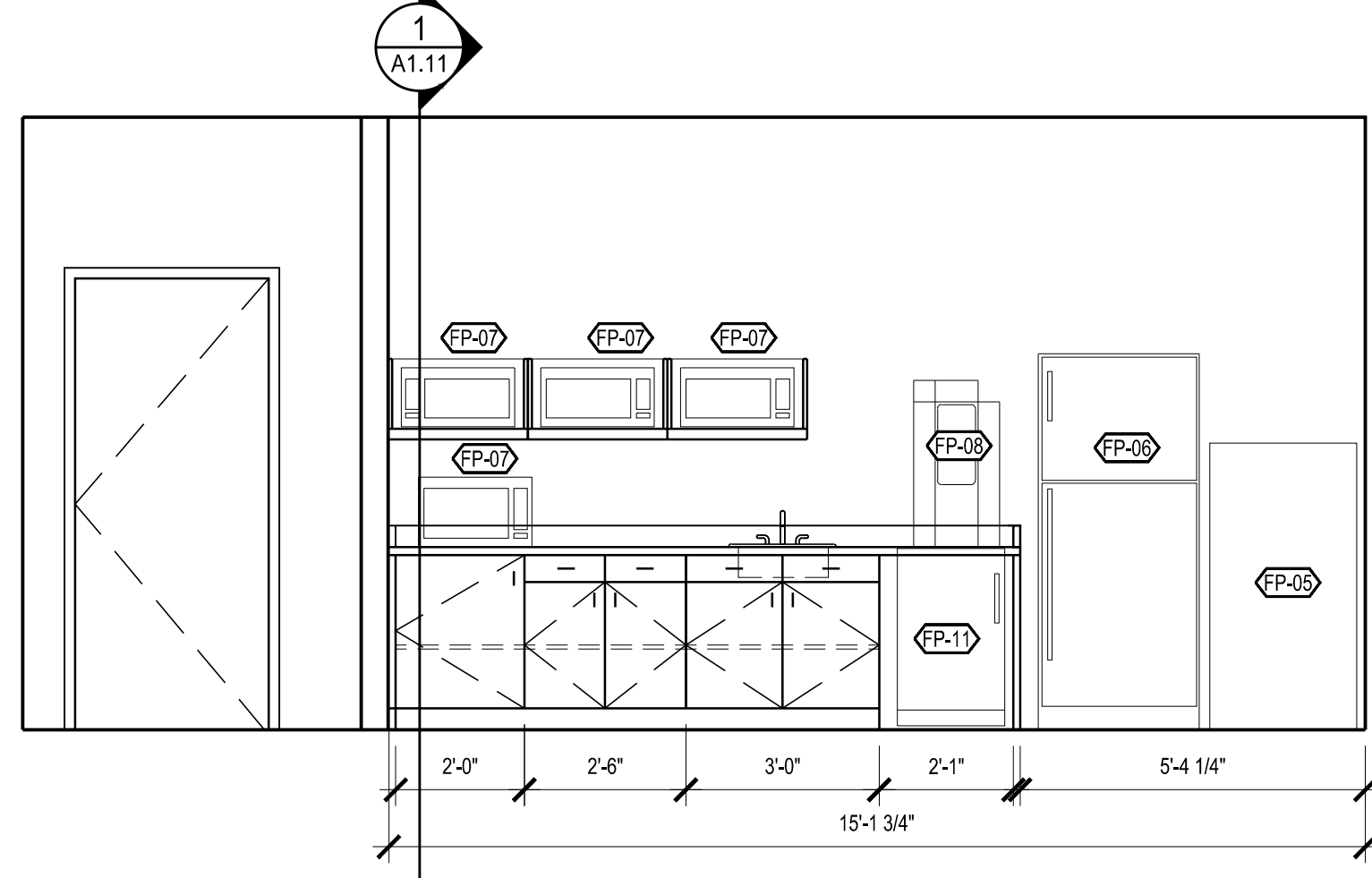
A LAVATORY COUNTER ELEVATION

3/4" = 1'-0"



1 BASE CABINET SECTION

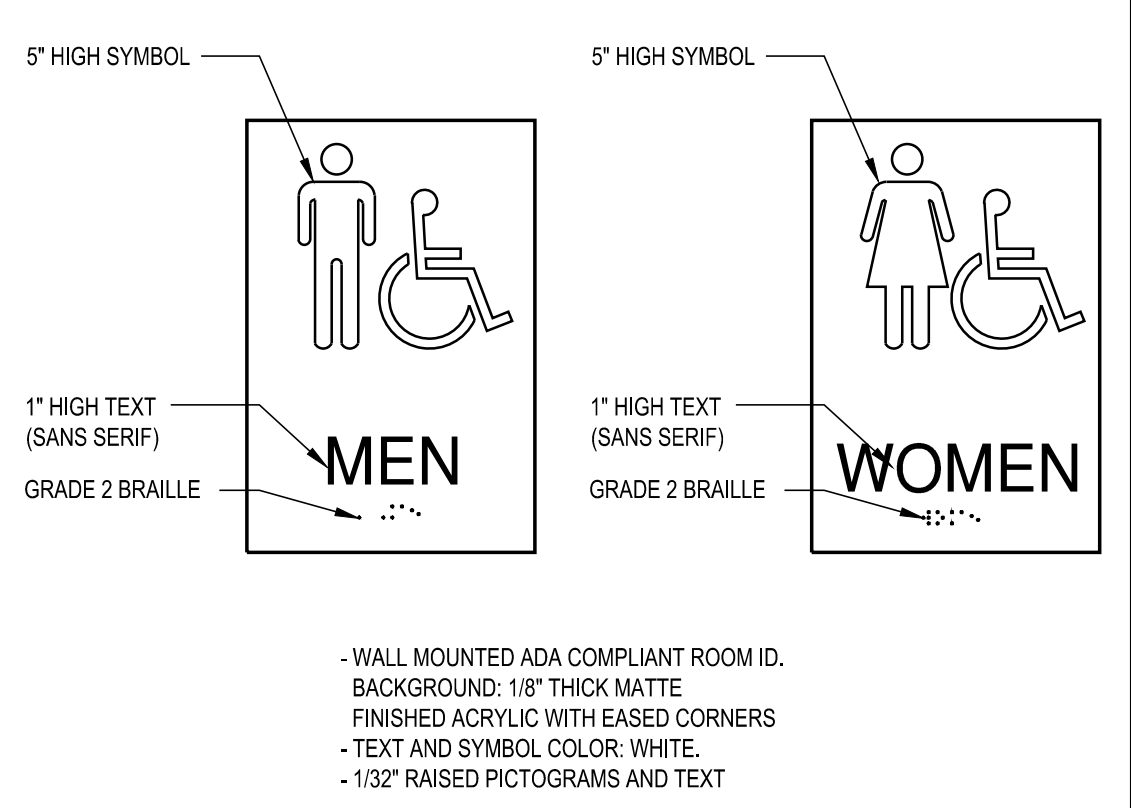
3/4" = 1'-0"



D INTERIOR ELEVATION

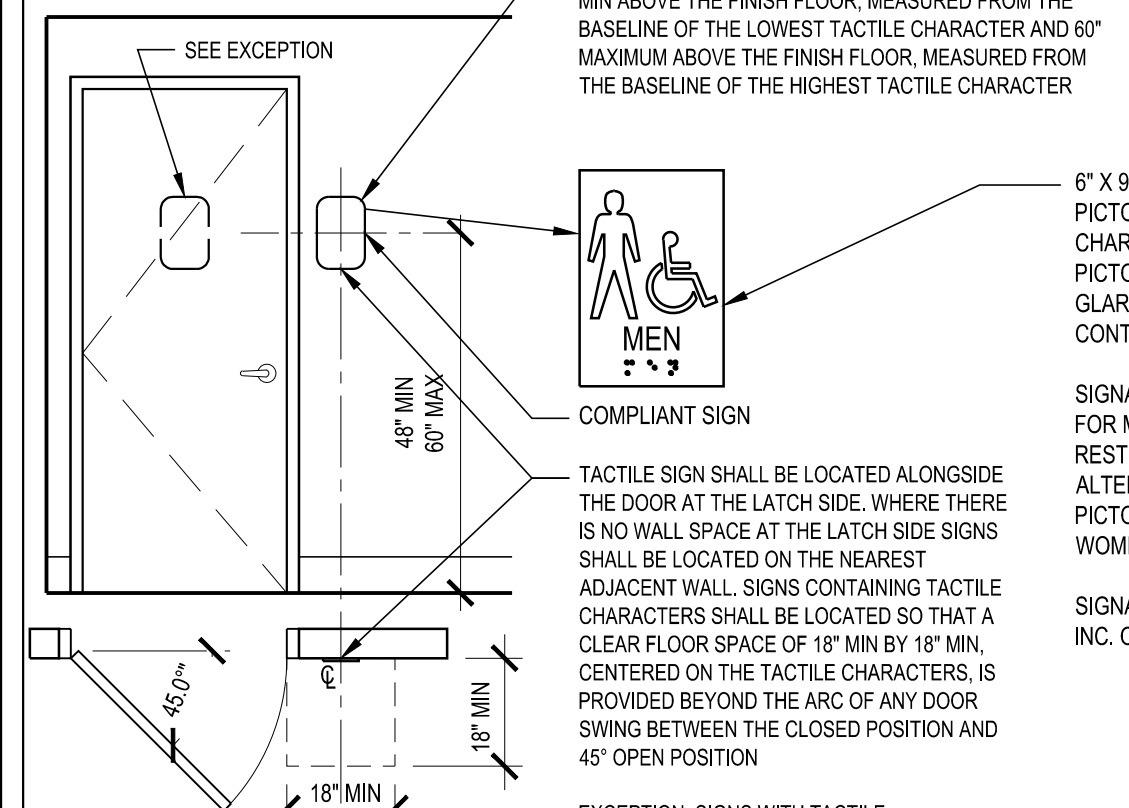
3/8" = 1'-0"

TYPICAL TOILET ROOM ELEVATIONS AND PLAN DETAILS

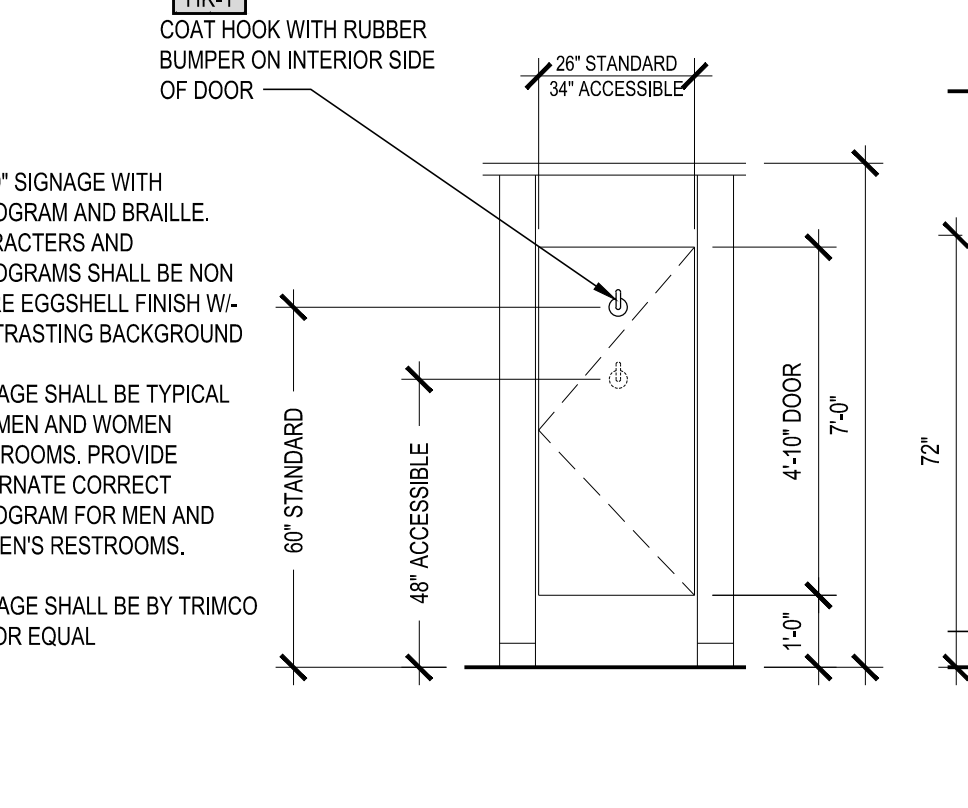


TOILET ROOM SIGNAGE

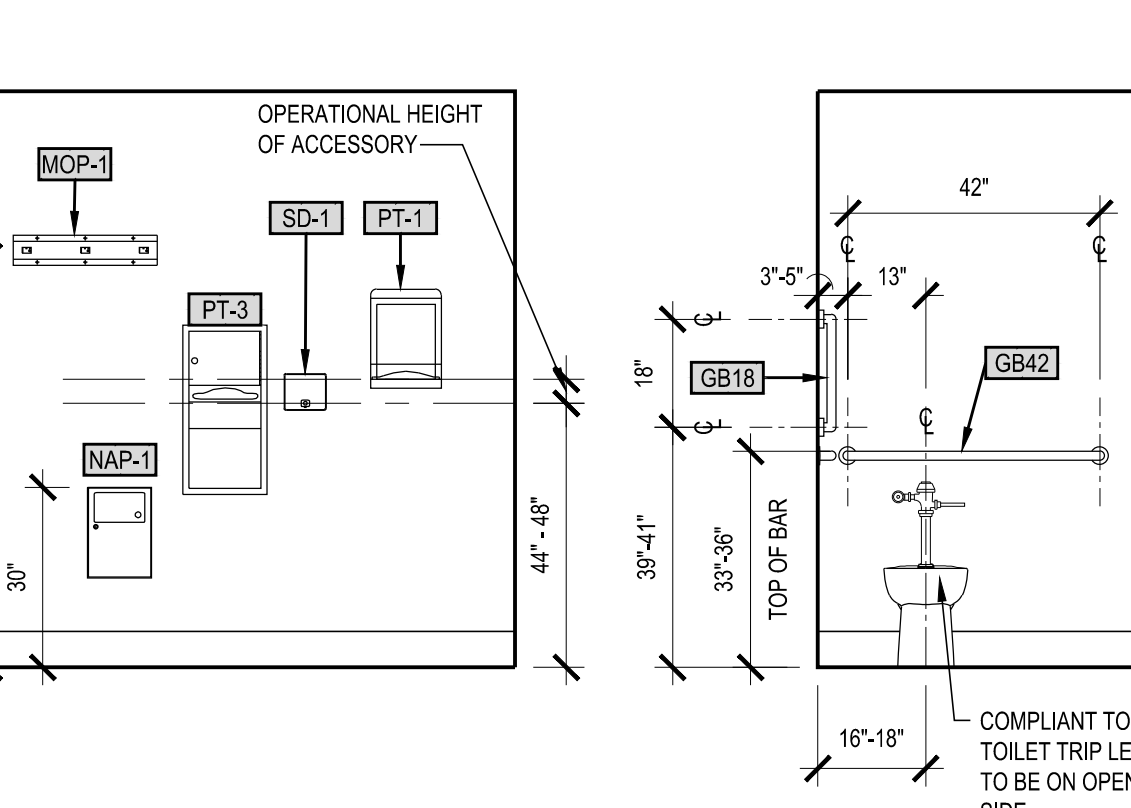
TYPICAL TOILET ROOM ELEVATIONS AND PLAN DETAILS



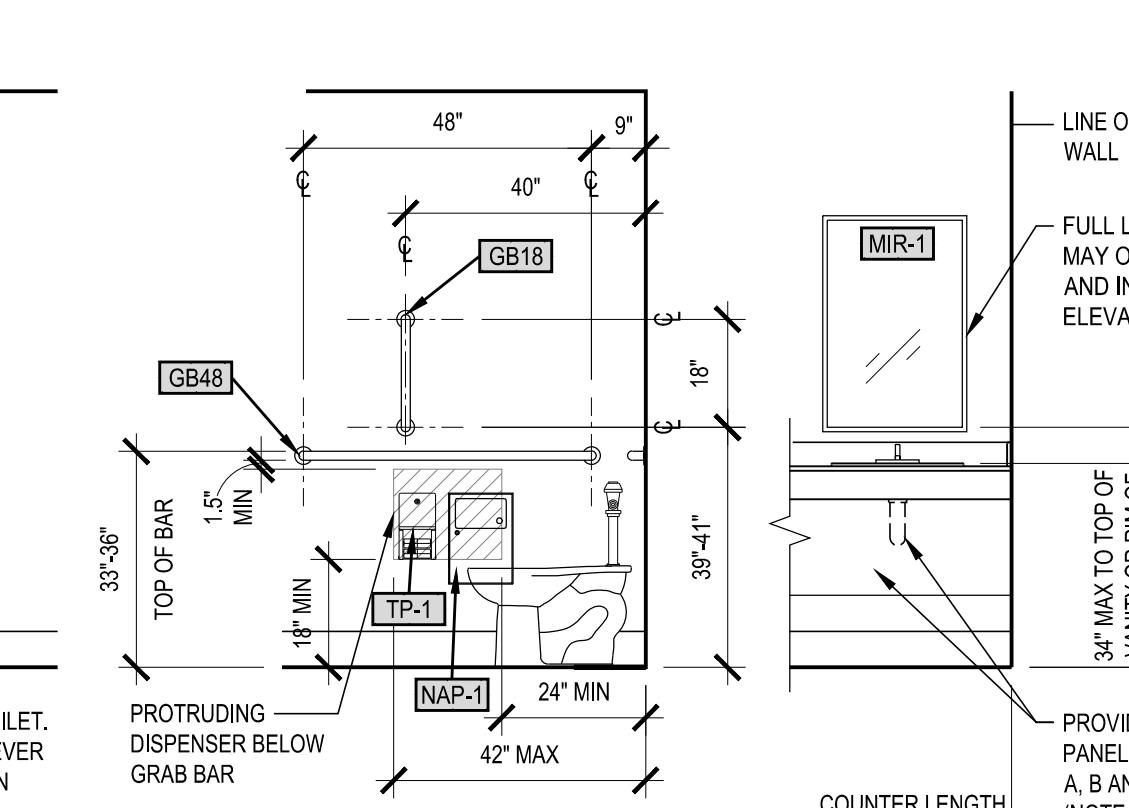
SIGNAGE CORRIDOR SIDE



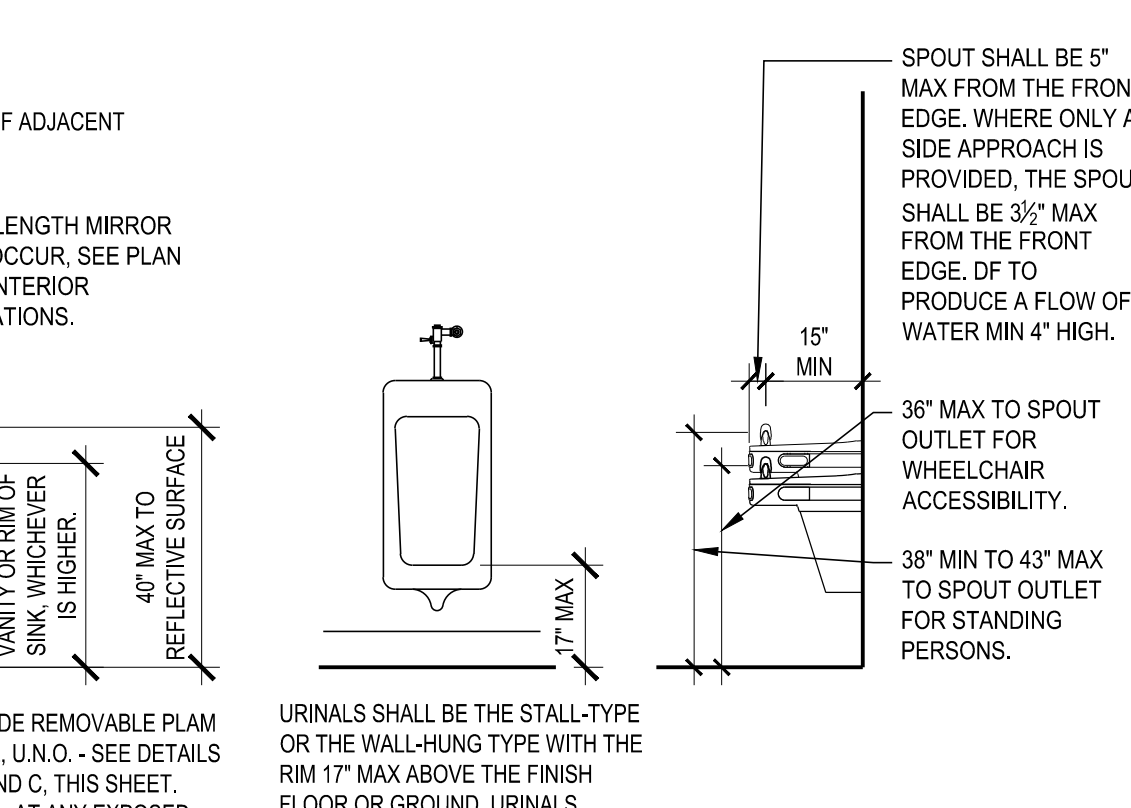
FLOOR MOUNTED, OVERHEAD BRACED TOILET PARTITION (FRONT)



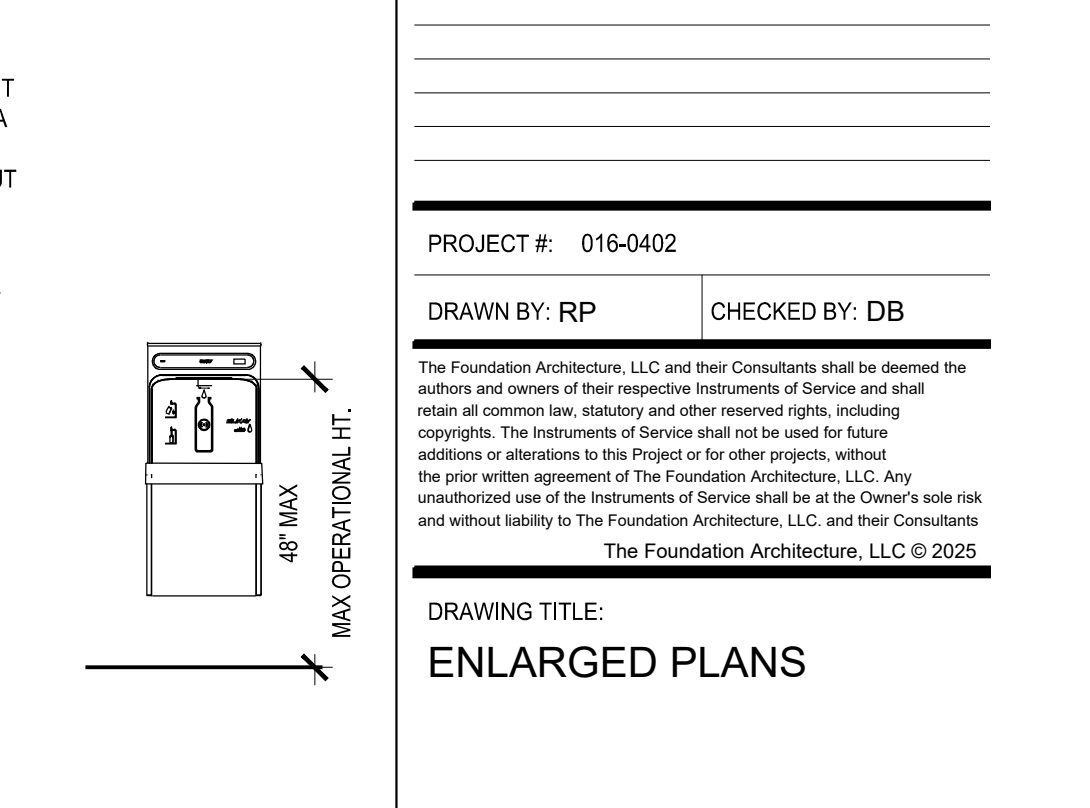
MISCELLANEOUS TOILET ROOM ACCESSORIES



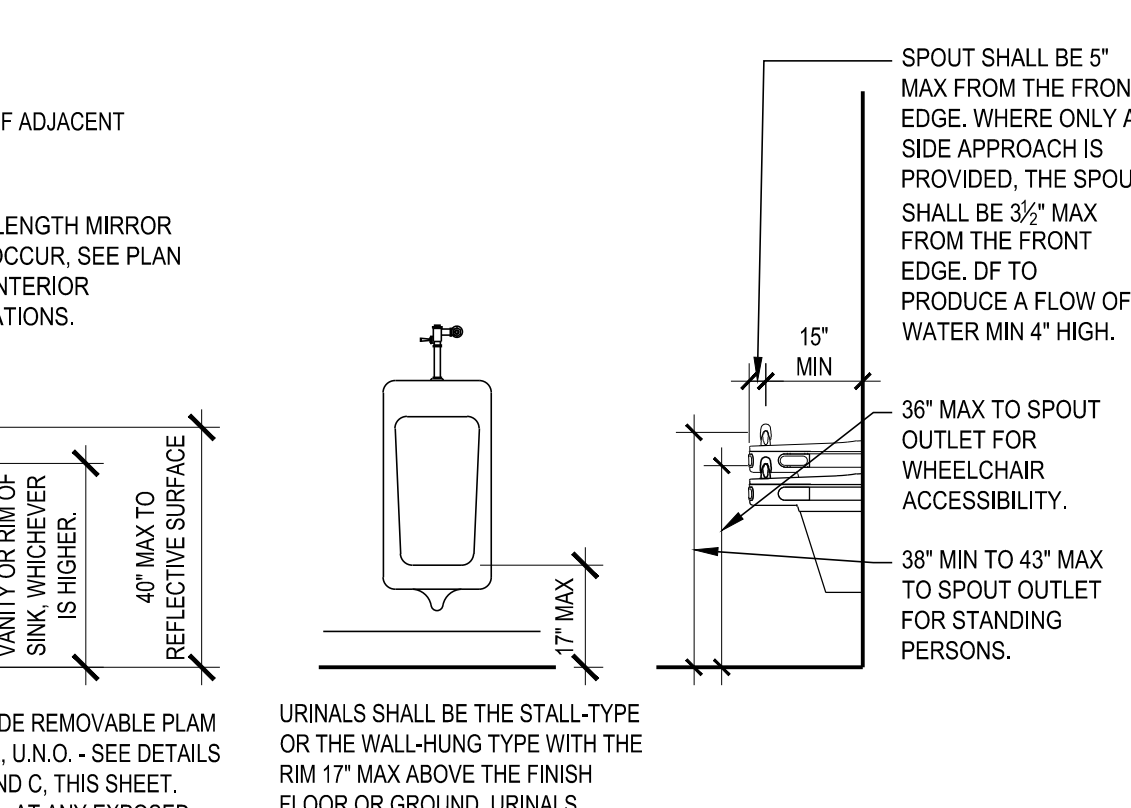
TOILET (FRONT)



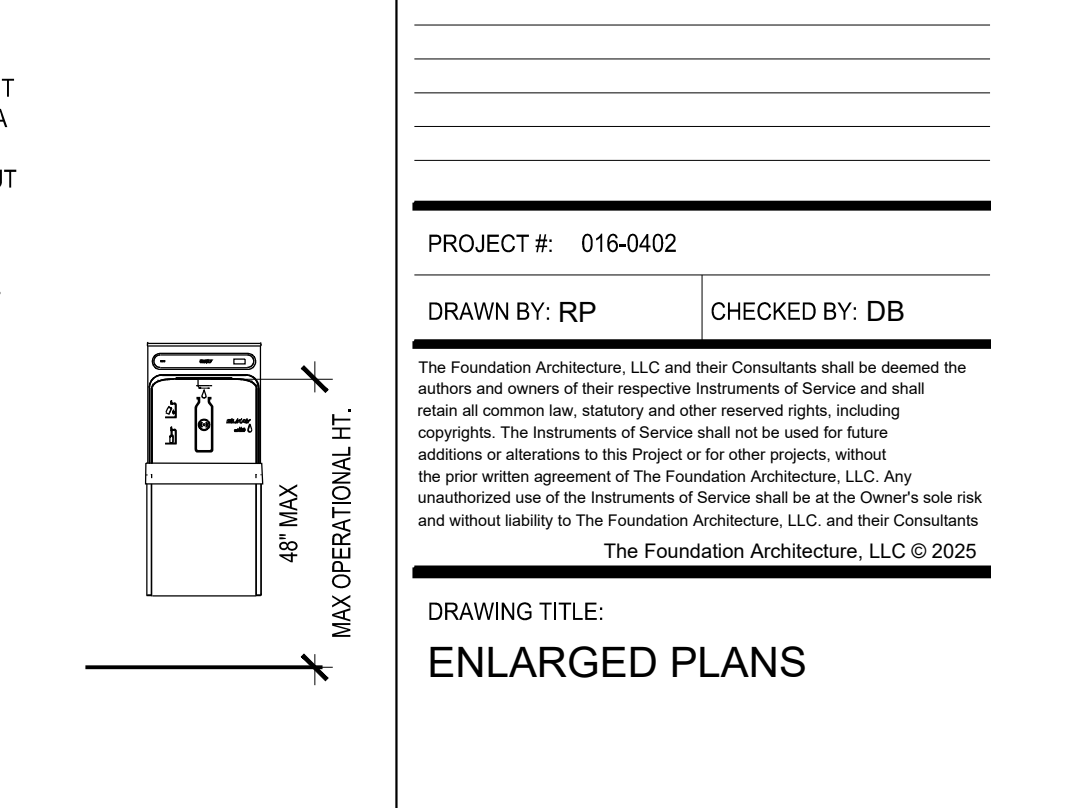
TOILET (SIDE)



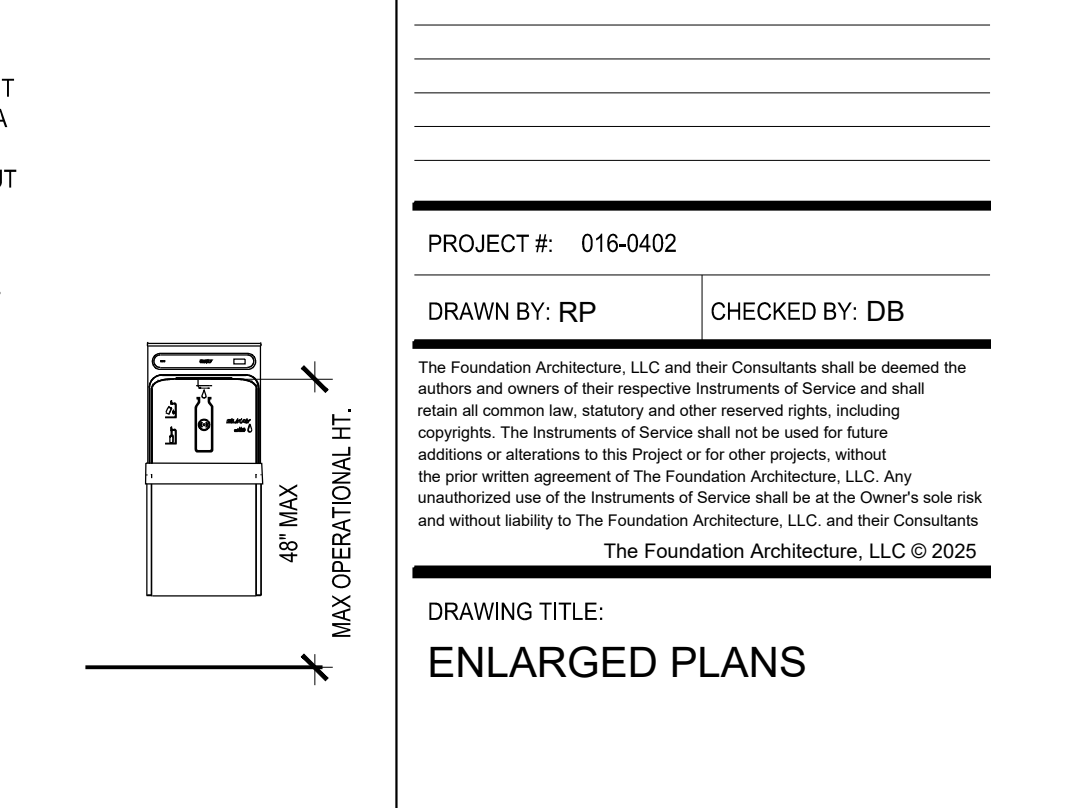
LAVATORY WITH COUNTER, AND MIRROR



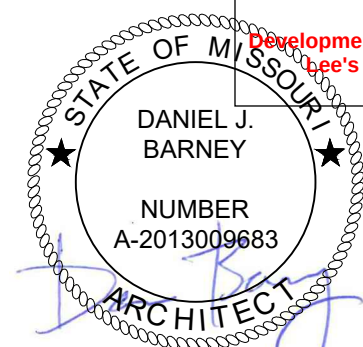
URINAL (FRONT)



DRINKING FOUNTAIN

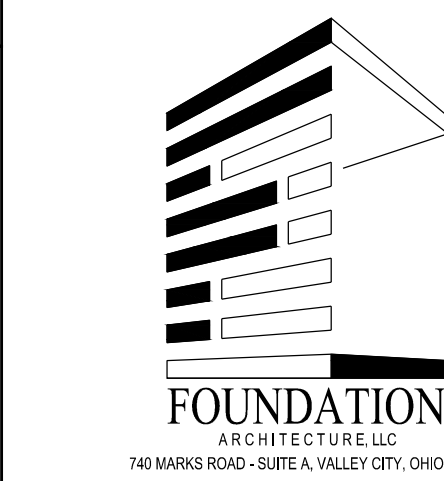


BOTTLE FILLING STATION



DANIEL J. BARNEY
LICENSE #A-2013009683
EXPIRATION DATE: 12/31/2025

SEAL



PROJECT:

WALL TYPE GENERAL NOTES

- BRACE ALL INTERIOR PARTITIONS ABOVE CEILING TO STRUCTURE ABOVE AS REQUIRED TO PREVENT WALLS FROM FLEXING.
- ALL FULL HEIGHT METAL STUD FRAMING SHALL BE BRACED TO THE ROOF STRUCTURE AND SHALL NOT BE FASTENED IN ANY WAY TO THE ROOF PANELS OR DECK.
- FRAMING CONTRACTORS SHALL PROVIDE SOLID BLOCKING CONCEALED IN WALLS AND ROUGH OPENINGS, AS REQUIRED, FOR MILLWORK, SUPPORT, GRAB BARS, CLOSET SHELVING, TOILET ACCESSORIES, ETC.
- CAULK PERIMETER OF ALL SOUND INSULATED WALLS WITH AN ADJUSTABLE SEALANT.
- SEE FLOOR PLAN WALL TAG AND WALL COMPONENT NOTES FOR ADDITIONAL INFORMATION.

FOLLOW NORTH AMERICAN SPECIFICATION STANDARDS:

- RUNNER TRACK GA TO MATCH STUD.
- WALLS OVER 12'-0" HIGH TO BE Laterally Braced, Vertical with 1/2" 16 GA Cold-Rolled Channels Clip Anchored to Metal Studs or 920B SPACER.
- DIFFERENT LEG WIDTHS MAY BE SUBSTITUTED TO REACH HIGHER HEIGHT LIMITS. GO TO SUBMIT SPECIFICATIONS FOR APPROVAL.
- BASED ON CLARK+KROETZCH - PROSTUD SERIES INTERIOR NON-BEARING PARTITIONS WITH ONE LAYER OF GYP BD EACH SIDE (HT VARIES); USE GA AND TYPE AS SCHEDULED ABOVE, UNO ON DWGS, (L240, S-FSP).
- FLANGE SIZE = 1/2"
- WEB STIFFENERS REQUIRED AT ENDS PER MANUFACTURER'S RECOMMENDATIONS.
- ADJUST PER MANUFACTURER'S SPECIFIC OR EQUIVALENT PRODUCT.
- STEEL STUD MANUFACTURER ASSOCIATION.

WALL COMPONENT NOTES

WALL TYPE TAG		ADDITIONAL WALL COMPONENT - SEE BELOW.
COMPONENT LETTER	COMPONENT NOTEDescription	
A	INSULATION OCCURS FROM FLOOR SLAB TO MIN 6" ABOVE FINISHED CEILING.	
B	INSULATION OCCURS FROM FLOOR SLAB TO DECK ABOVE.	
C	MOLD/MOISTURE RESISTANT GYP BD ON WET WALL SIDE.	

TENANT IMPROVEMENTS FOR:

SONNY'S

2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ADDENDUM A 8/15/25
XX/XX/XX

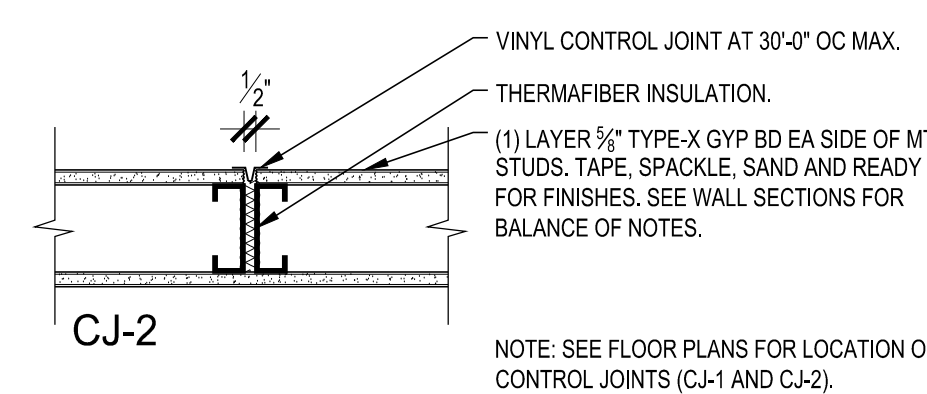
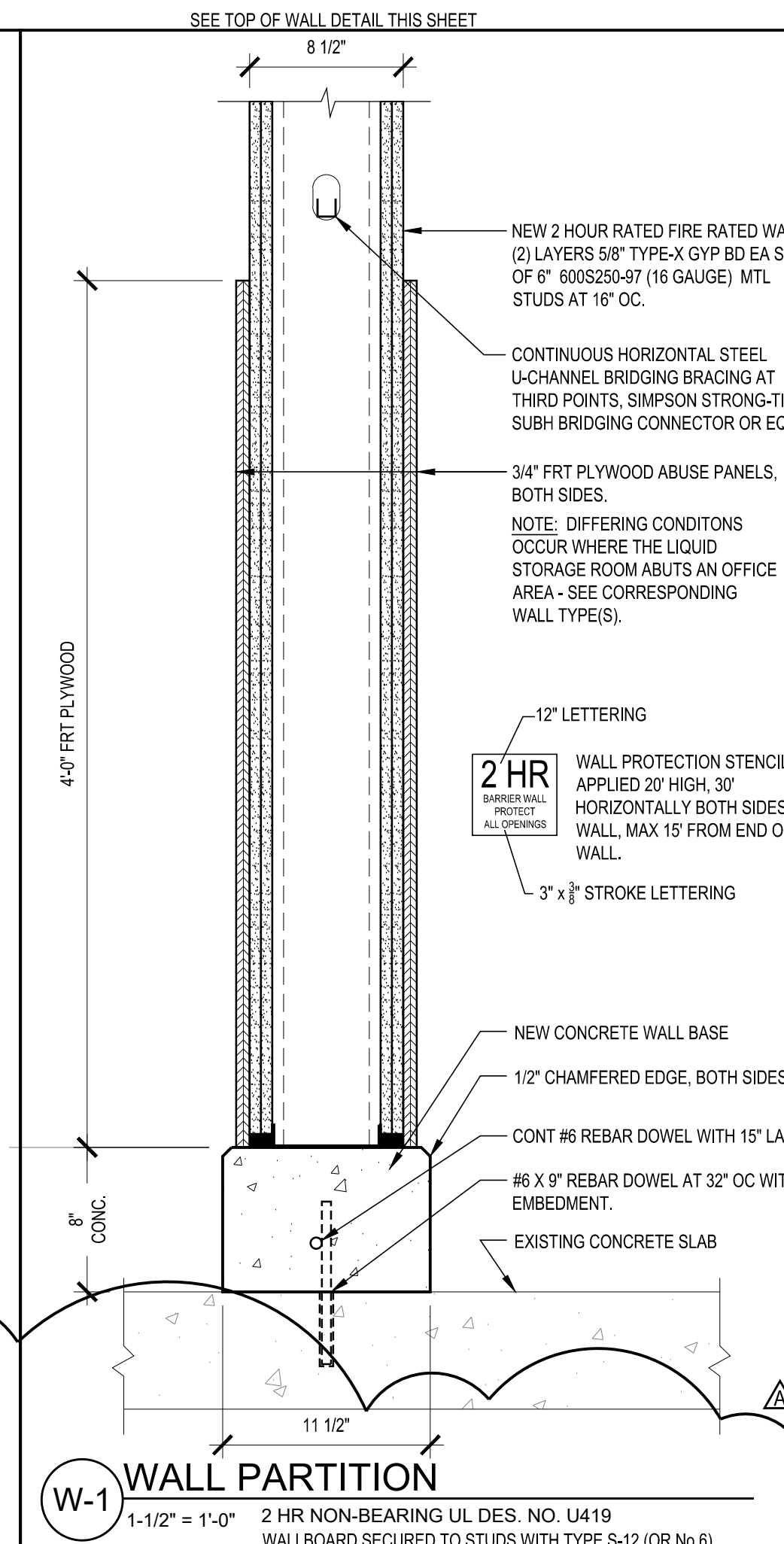
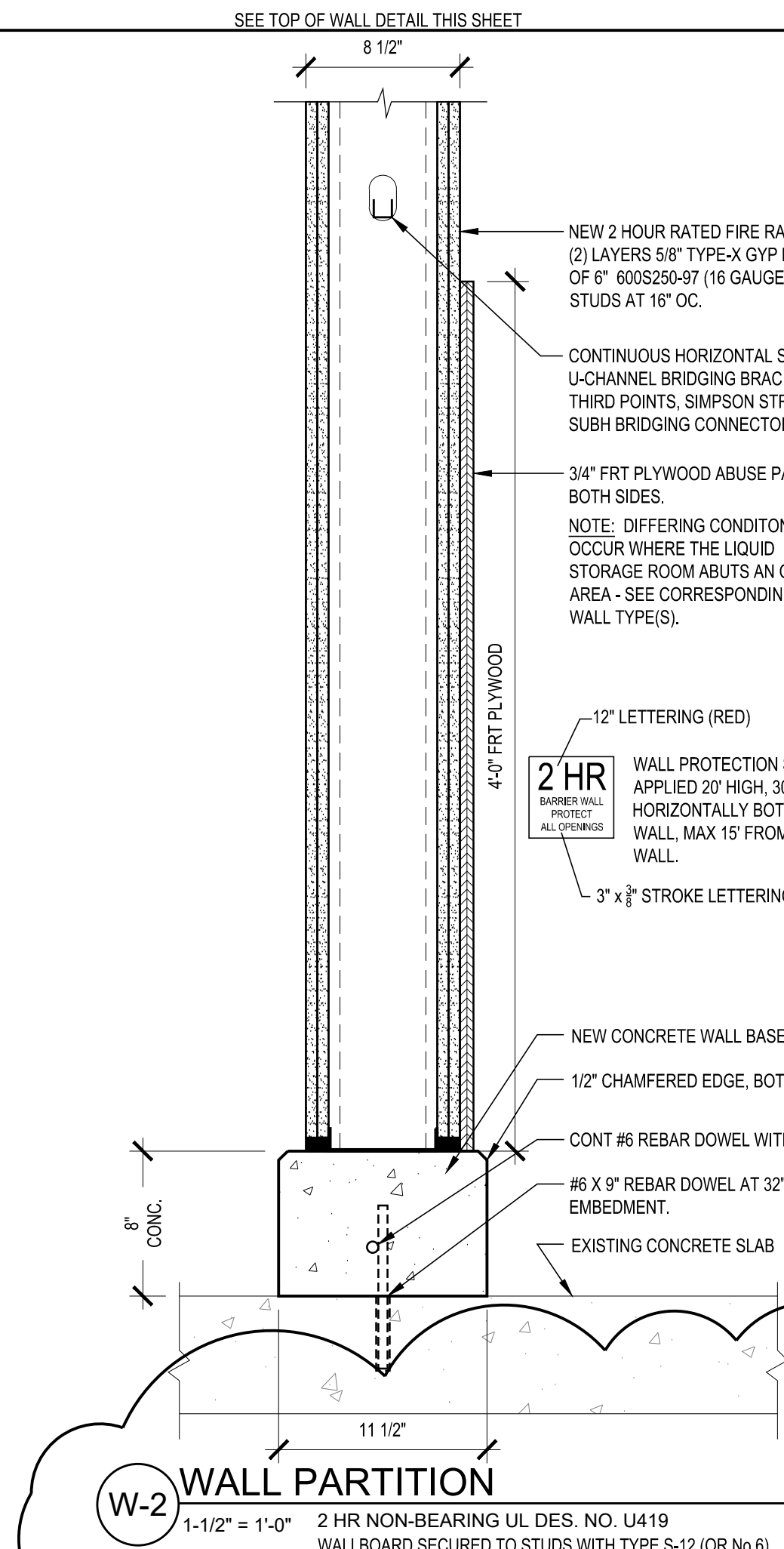
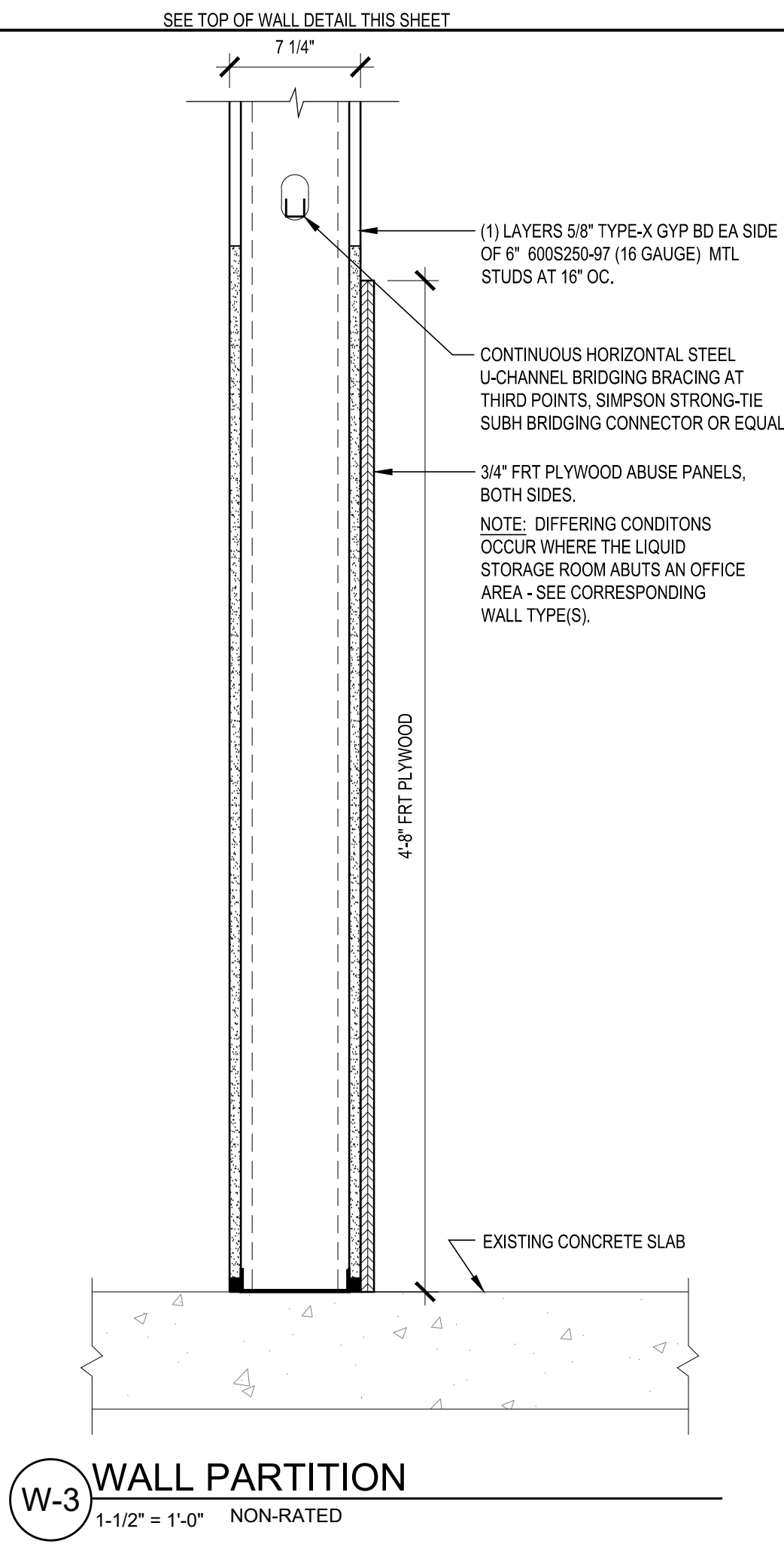
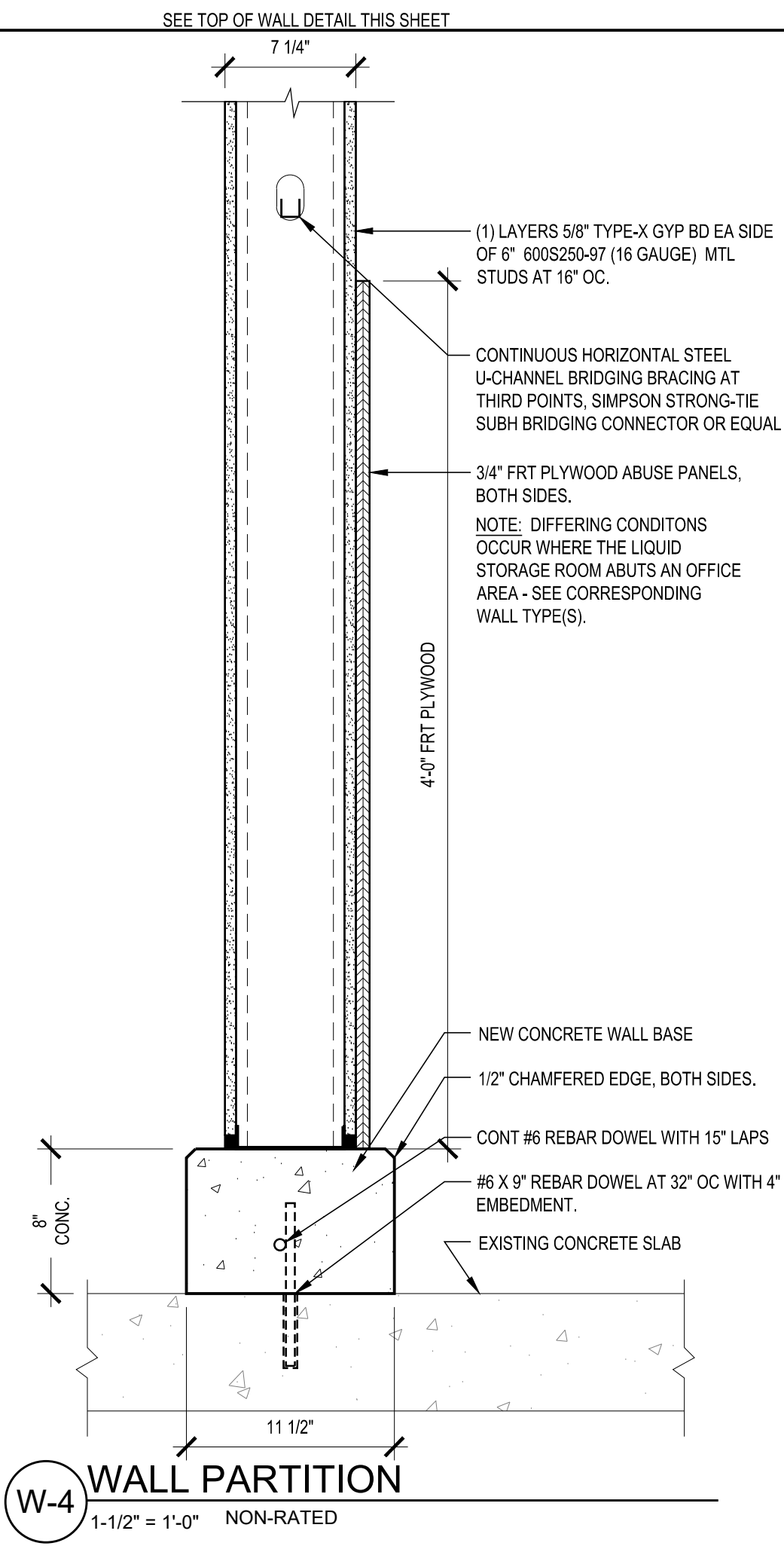
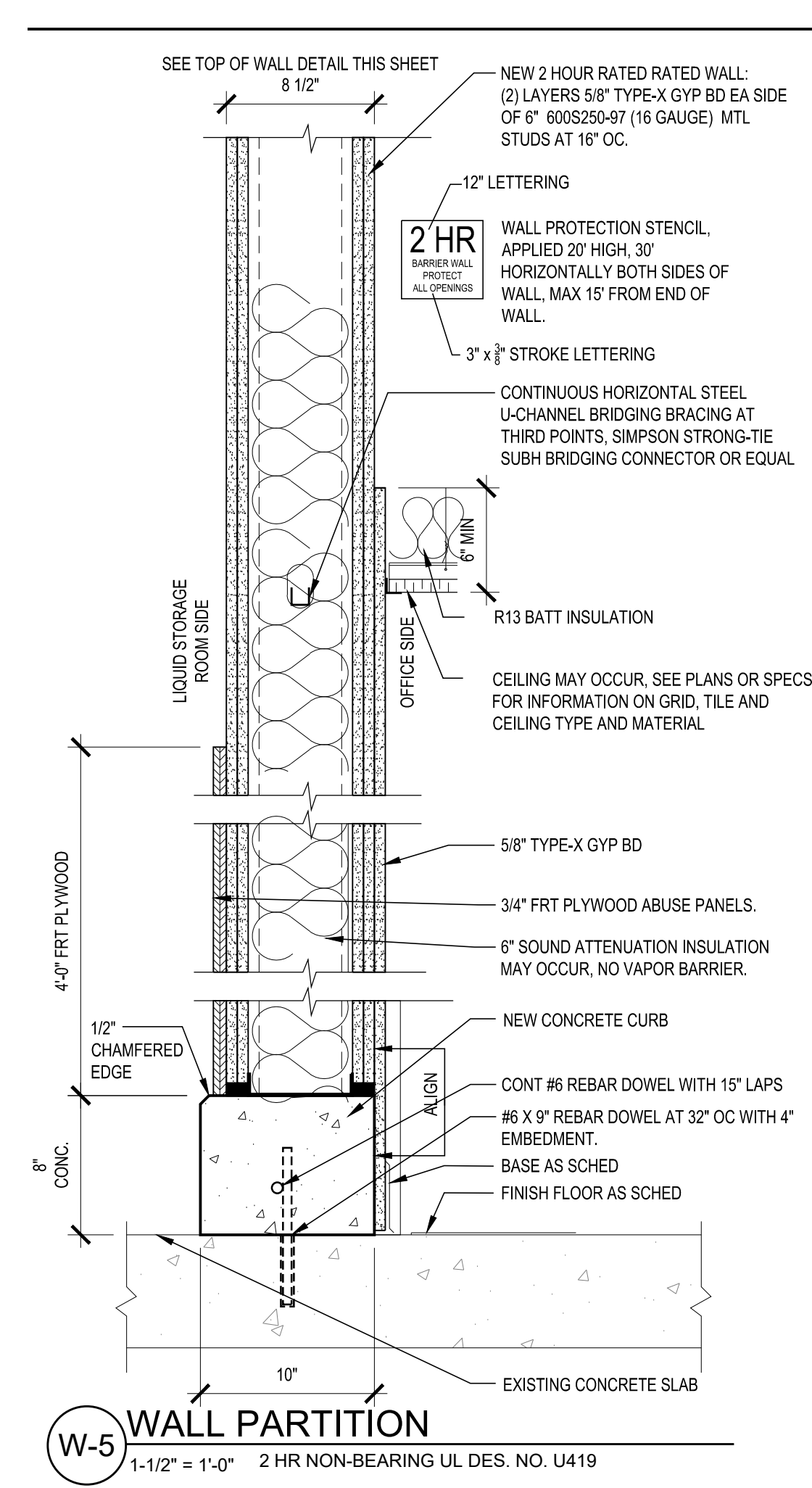
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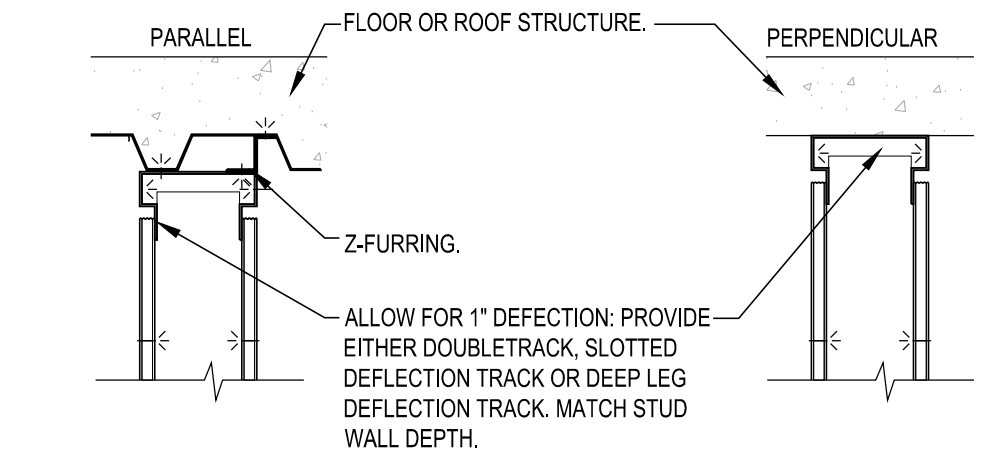
DRAWING TITLE:
WALL TYPES
AND DETAILS

SHEET #:

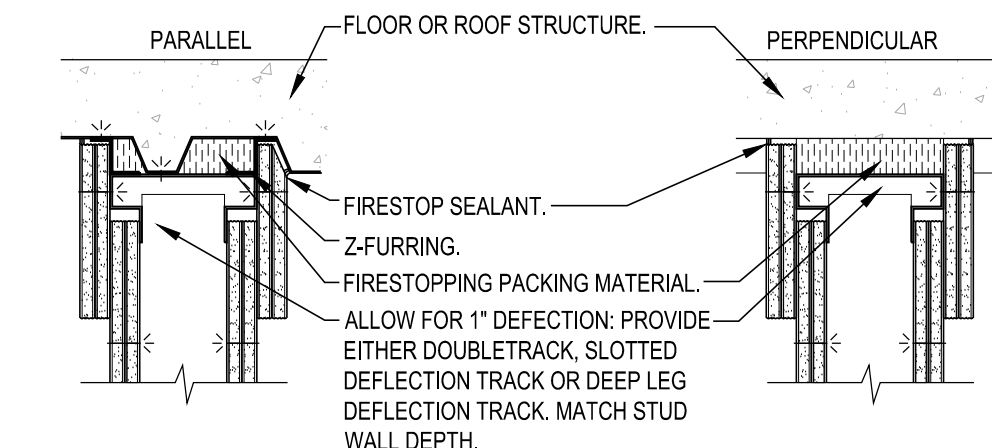
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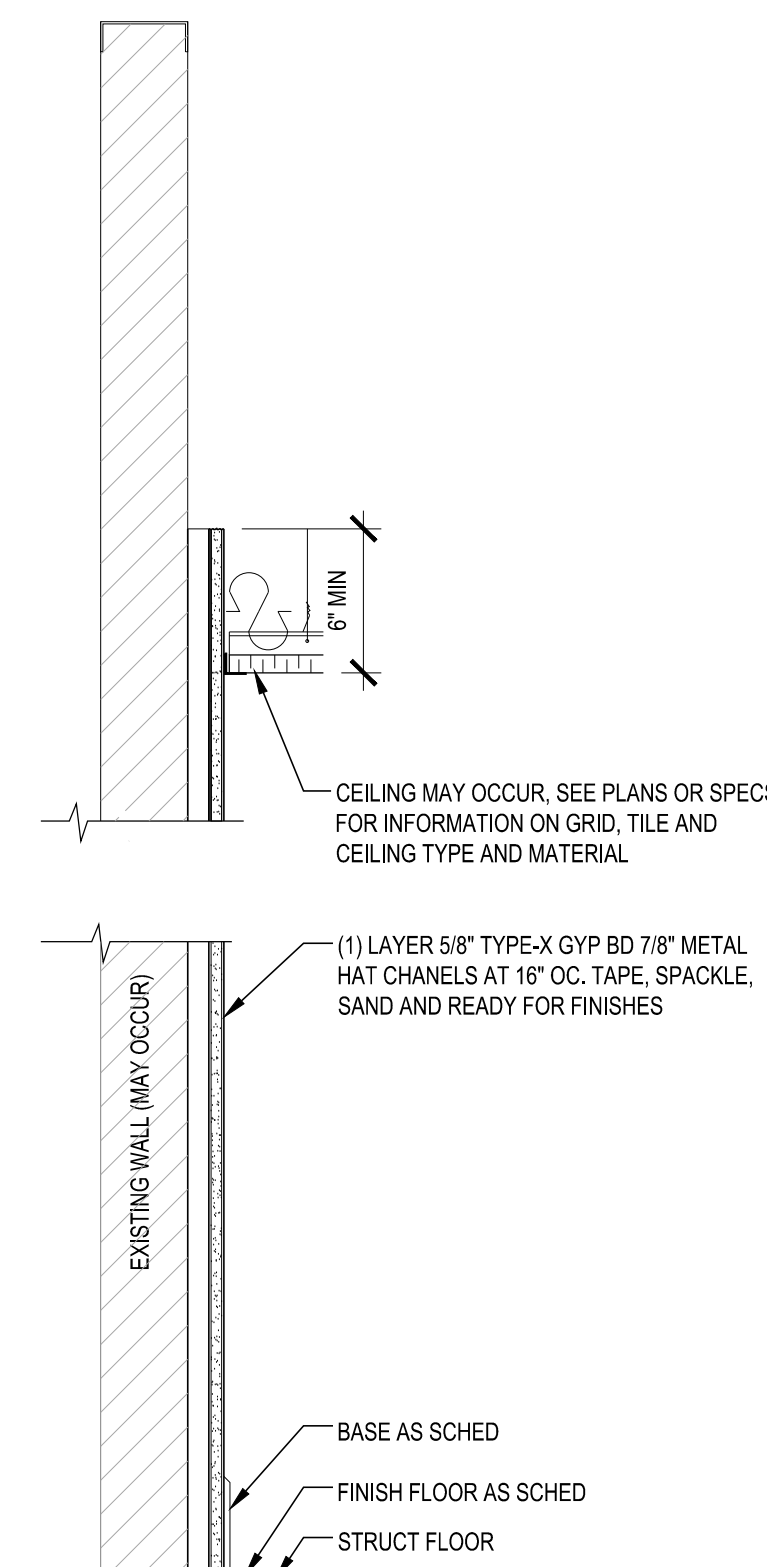
2 TYP GYP CONTROL JOINT DETAILS
1-1/2\"/>



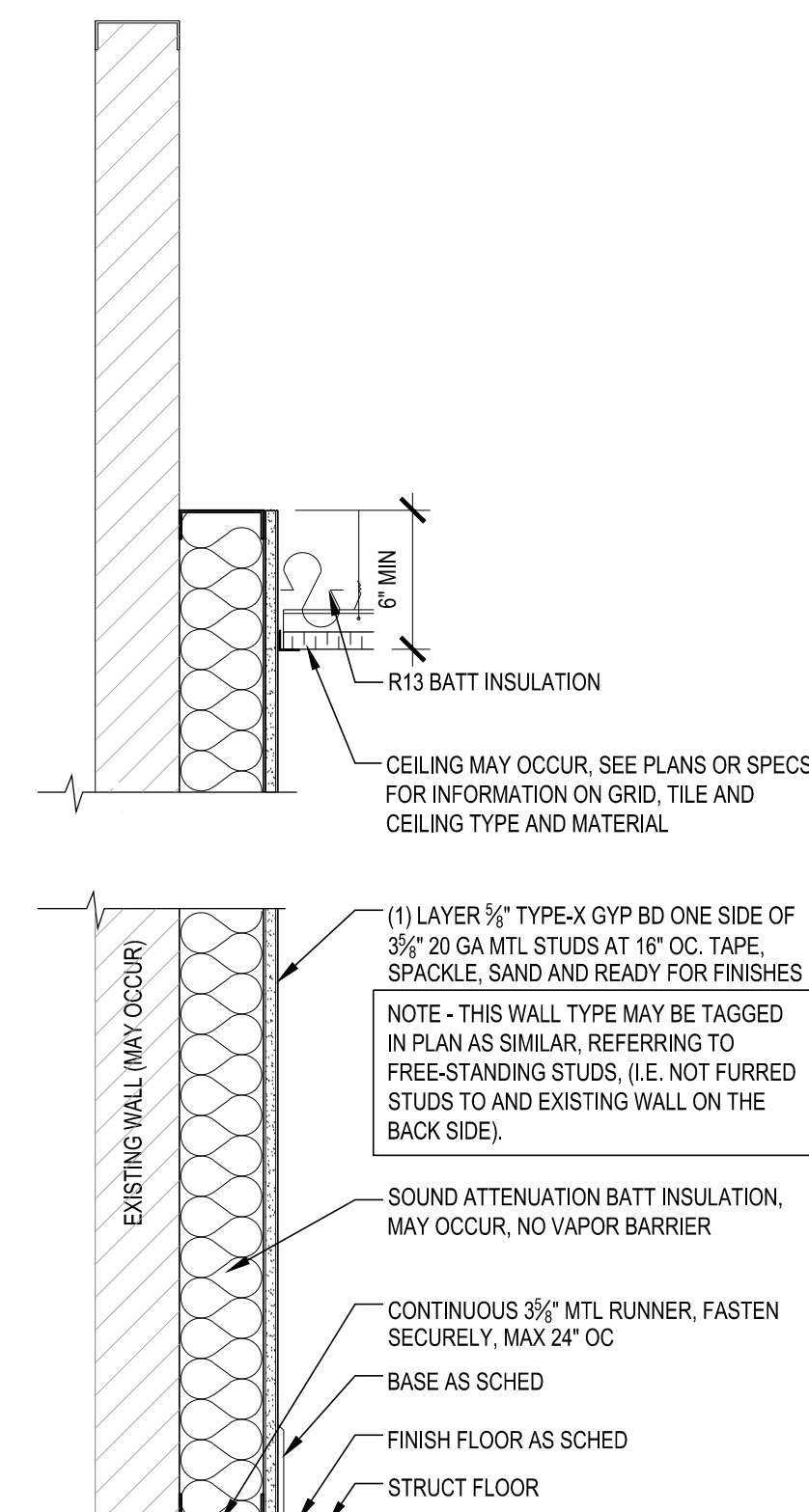
WT-2 HEAD TO DECK JOINT DETAILS
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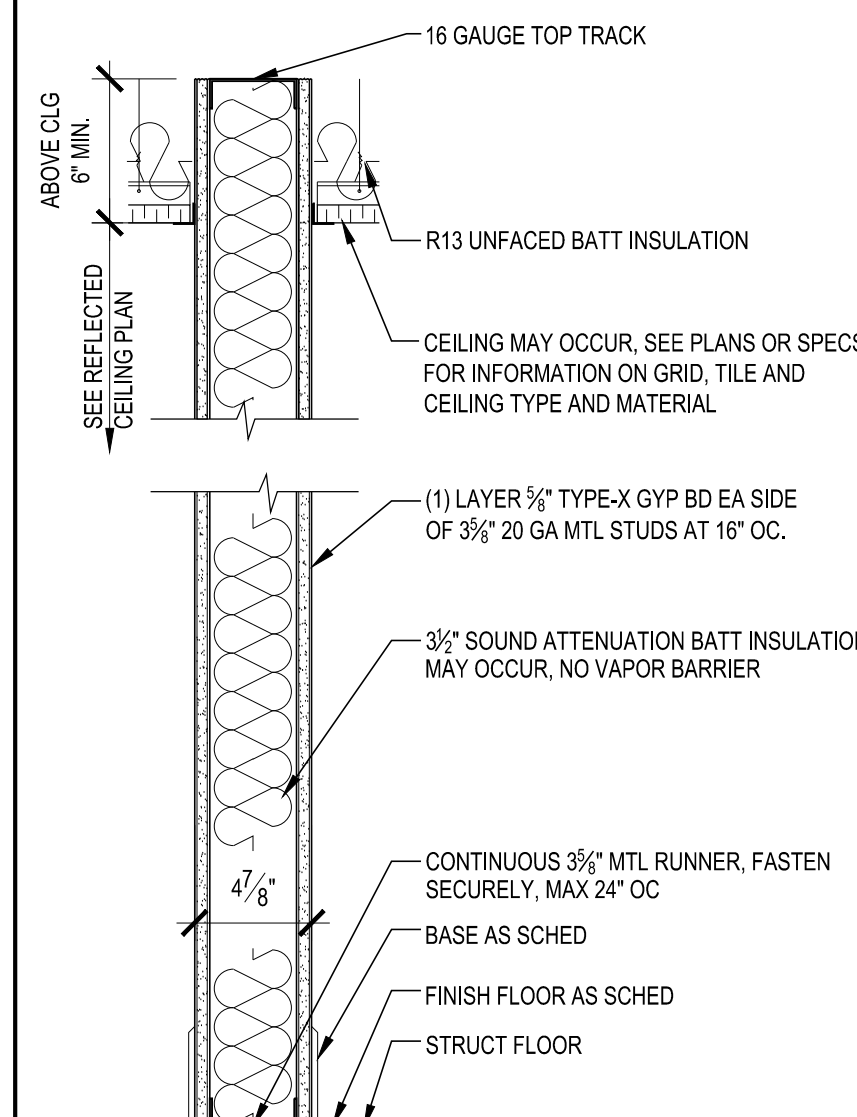
WT-3 HEAD TO DECK JOINT DETAILS
1-1/2\"/>



W-8 WALL PARTITION
1-1/2\"/>



W-7 WALL PARTITION
1-1/2\"/>



W-6 WALL PARTITION
1-1/2\"/>

doi:10.1016/j.jmb.2006.08.001



1. PREP ALL WALLS TO RECEIVE SCHEDULED FINISH.
2. PREP ALL FLOORS TO RECEIVE SCHEDULED FINISH.
3. INSTALL METAL DIVIDER STRIPS AT ALL TRANSITIONS BETWEEN CERAMIC TILE, RUBBER AND CARPETING SURFACES UNLESS OTHERWISE NOTED.
4. MOVEMENT JOINTS SHALL BE PROVIDED IN ALL PORCELAIN TILE FLOORS. PROVIDE MOVEMENT JOINTS TO 2" IN EACH DIRECTION WHERE PORCELAIN TILE FLOORS ARE EXPOSED TO DIRECT SUNLIGHT.
5. APPLY SELF-LEVELING COMPOUND AND/OR TROWELABLE LEVELING COMPOUND AS REQUIRED TO PROVIDE A SMOOTH, LEVEL FLOOR SURFACE TO RECEIVE NEW FLOOR FINISHES.
6. SUBSURFACE TOLERANCES: FOR TILES WITH ALL EDGES SHORTER THAN 15", MAXIMUM ALLOWABLE VARIATION IS 1/4" IN 10' FROM THE REQUIRED PLANE, WITH NO MORE THAN 1/16" VARIATION IN 12" WHEN MEASURED FROM THE HIGH POINTS IN THE SURFACE. FOR TILES WITH AT LEAST ONE EDGE 15" IN LENGTH, MAXIMUM ALLOWABLE VARIATION IS 1/8" IN 10' FROM THE REQUIRED PLANE, WITH NO MORE THAN 1/16" VARIATION IN 24" WHEN MEASURED FROM THE HIGH POINTS IN THE SURFACE.
7. TILE FLOOR AND WALL FINISHES SHALL BE INSTALLED PER THE COUNCIL OF NORTH AMERICA, INC. (TCNA) CURRENT STANDARDS.
8. INSTALL CRACK ISOLATION MEMBRANE OVER ALL SAW CUTS IN CONCRETE FLOOR SLABS SCHEDULED TO RECEIVE NEW FLOOR TILE.
9. FINISHES NOT SPECIFIED SHALL BE SELECTED BY TENANT AND APPROVED BY ARCHITECT.
10. ALL MATERIALS AND FINISHES SHALL BE NEW UNLESS OTHERWISE NOTED.
11. PAINTING THROUGHOUT SHALL BE (1) COAT PRIMER, (2) COATS FINISH PAINT.
12. LATEX PAINT ON WALLS AND ALOYS SCAFF ON METAL AND WOOD SURFACES.
13. ALL PRE-PRIEMED H.D. DOORS AND FRAME SHALL RECEIVE (2) FINISH COATS OF PAINT.
14. INSTALL MOISTURE RESISTANT (MR) GYPSUM BOARD WHERE CERAMIC WALL TILE OCCURS AND ON ALL PLUMBING FITTINGS WALLS.
15. REFER TO WINNER APPROVED COLOR SCHEDULE FOR FINAL COLOR, STYLE AND MANUFACTURER SELECTIONS.
16. ALL GYPSUM BOARD, GLASS MATT AND FIBER REINFORCED GYPSUM PANEL SURFACES SHALL HAVE THE MINIMUM LEVEL OF FINISH B-1 THROUGH J-1 LISTED BELOW PRIOR TO THE APPLICATION OF ANY DECORATIVE FINISH (IE. PAINT, WALLCOVERING, ETC.) UNLESS SPECIFICALLY NOTED OTHERWISE. THE LEVEL OF FINISH SHALL BE IN COMPLIANCE WITH THE GYPSUM ASSOCIATIONS GA-214 "LEVELS OF FINISH FOR GYPSUM PANEL PRODUCTS":
LEVEL 0 - TEMPORARY CONSTRUCTION OR WHENEVER A FINAL DECORATIVE FINISH HAS NOT BEEN DETERMINED.
LEVEL 1 - SMOKE BARRIER APPLICATIONS AND PLEXUM AREAS ABOVE CEILINGS AND IN NON-VISIBLE LOCATIONS.
LEVEL 2 - SUBSTRATE FOR TILE AND AREAS (AS SPECIFIED BY ARCHITECT) WHERE SURFACE APPEARANCE IS NOT A CONCERN.
LEVEL 3 - SUBSTRATE FOR APPLICATION OF CONTINUOUS HEAVY- OR MEDIUM-TEXTURE FINISHES (SPR OR HAND APPLIED) BEFORE PAINTING.
LEVEL 4 - SUBSTRATE FOR FLAT PAINTS (0 TO 5 GLOSS UNITS AT A 60° ANGLE AND 0 TO 10 GLOSS UNITS AT AN 85° ANGLE), LIGHT TEXTURES AND NON-CONTINUOUS TEXTURES.
LEVEL 5 - SUBSTRATE FOR NON-FLAT PAINTS (GREATER THAN 5 GLOSS UNITS AT A 60° ANGLE AND GREATER THAN 10 GLOSS UNITS AT AN 85° ANGLE) OR OTHER GLOSSY DECORATIVE FINISHES: DARKER TONE PAINTS, COMMERCIAL GRADE WALLCOVERINGS AND AREAS WITH CRITICAL LIGHTING CONDITIONS.
20. GC TO PROVIDE SHOP DRAWINGS/SUBMITTALS OF ALL SPECIFIED FINISHES FOR APPROVAL PRIOR TO ORDERING
21. NO SUBSTITUTIONS TO SPECIFIED MATERIALS OR/AND BRANDS OF MATERIALS WILL BE ACCEPTED UNLESS APPROVED BY THE ARCHITECT. IN WRITING, PRIOR TO CONSTRUCTION. ANY CONTRACTOR REQUESTING SUBSTITUTION SHALL SUBMIT SIX (6) COPIES OF DRAWINGS OR ELECTRONIC COPY, AND/OR PRODUCT LITERATURE ALONG WITH THE AMOUNT OF COST SAVINGS FOR THE ITEM IN QUESTION. THE CONTRACTOR MUST ALLOW THE ARCHITECT AT LEAST SEVEN BUSINESS DAYS TO DETERMINE THE SUITABILITY OF THE SUBSTITUTION.
22. COORDINATE WITH CODE INVESTIGATION FOR FLAME SPREAD AND SMOKE DEVELOPMENT RESTRICTIONS FOR ALL INTERIOR MATERIALS / FINISHES.
23. PER NFPA 101 LIFE SAFETY CODE
CHAPTER 10 INTERIOR FINISHES, CONTENTS AND FURNISHINGS. PARAGRAPH 10.2.3 INTERIOR WALL OR CEILING FINISH TESTING AND CLASSIFICATION STATES "INTERIOR WALL OR CEILING FINISH THAT IS REQUIRED ELSEWHERE IN THE CODE TO BE CLASS A, B, OR C SHALL BE CLASSIFIED BASED ON TEST RESULTS FROM NFPA 255, ASTM E 84 OR UL 723."
24. PAINTING OF GALVANIZED METAL SURFACES REQUIRES THE GALVANIZED METALS TO BE PROTECTED BY A FORM OF PASSIVATION TO BE COMPLETELY REMOVED. REMOVAL OF THE OLAND PASSIVATION MUST BE TESTED TO CLEANSING SMALL AREA VIA A WATERSHED OR DISK SURFACE PREPARATION. ONCE THAT AREA IS DRY, TEST THE CLEAN AREA WITH A COPPER SULFATE SOLUTION IN A WATERSHED OR DISK TEST ON BLACK. THE PASSIVATION REMAINS ON THE SURFACE. THEREAFTER REPEAT THE PROCESS 3 TIMES. PREPARATION, CLEANING AND RE-TESTED PRIOR TO COATING THE SURFACE.

PROJECT #: 016-0402	
DRAWN BY: RP	CHECKED BY: DB

SHEET #

A1.41

1. COORDINATE LOCATIONS OF LIGHTS, GRILLS, DIFFUSERS, SPEAKERS ETC WITH MECHANICAL AND ELECTRICAL DRAWINGS.
2. ALL AREAS SHALL BE FULLY SPRINKLERED.
3. GENERAL CONTRACTOR TO COORDINATE WITH FIRE PROTECTION SUBCONTRACTOR AND APPROVED FIRE PROTECTION SHOP DRAWINGS FOR QUANTITY AND LOCATIONS OF SPRINKLER HEADS.

DANIEL J. BARNEY
LICENSE #A-2013009683
EXPIRATION DATE: 12/31/2025

SEAL



		EXISTING 2 X 4 ACOUSTICAL CEILING TILE
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[illegible]

PROJECT:

TENANT IMPROVEMENTS FOR:

SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 8/15/25

PROJECT #: 016-0402	
DRAWN BY: RP	CHECKED BY: DB

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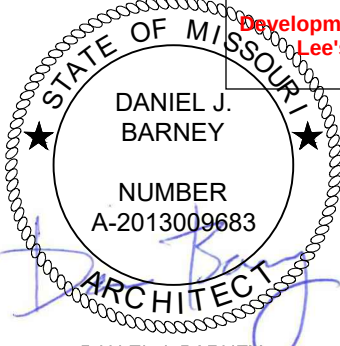
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DRAWING TITLE:

PARTIAL REFLECTED
CEILING PLAN

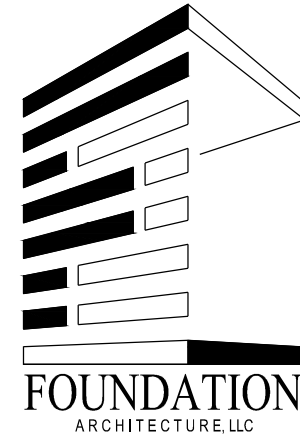
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A1.51



DANIEL J. BARNEY
LICENSE #A-2013009683
EXPIRATION DATE: 12/31/2025

SEAL



PROJECT#:

TENANT IMPROVEMENTS FOR:

SONNY'S

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LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
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DRAWING TITLE:
DOOR/FRAME SCHEDULE

SHEET #:

A6.01

DOOR HARDWARE		MFR. - MODEL NO.	FINISH	REMARKS
HARDWARE ITEM				
HINGES	INTERIOR			STAINLESS STEEL WITH NON-RISING REMOVABLE PINS
	EXTERIOR			STAINLESS STEEL WITH NON-RISING REMOVABLE PINS
	STOREROOM		26D	
	CLASSROOM		26D	
BORED LOCKSETS	OFFICE		26D	LEVER TYPE - INTERCHANGEABLE CORES
	PRIVACY		26D	
	PASSAGE		26D	
	EXIT		26D	
MORTISED LOCKSET	LOCKSET		26D	
	CYLINDER		26D	
CLOSERS	STOREROOM	MATCH EXISTING		STANDARD ARM WITH HOLD OPEN
	STOREFRONT			STANDARD ARM
	HOTEL GUEST ROOM			STANDARD ARM
	HEAVY DUTY			
COORDINATOR				
DEADBOLT LOCK				
DEADBOLT LEVER				"LOCKED" OR "OPEN" INDICATOR
THUMBTURN CYLINDER				
PANIC HARDWARE	EXIT DEVICE		26D	
PANIC TRIM	EXIT DEVICE			
PANIC HARDWARE	UPGRADE			
STRIKE	DUST PROOF		26D	
LATCH PROTECTION PLATE			32D	
NIGHT LATCH	DOOR GUARD		26D	MATCH DOOR COLOR
ASTRAGAL	DUST PROOF			
PUSH/PULL	DUST PROOF		26D	
AUTO FLUSH BOLTS	WOOD DOORS	MATCH EXISTING	32D	
	METAL DOORS		32D	
MANUAL FLUSH BOLTS			26D	
PROTECTION (KICK) PLATE			32D	
PROTECTION (KICK) PLATE	UPGRADE		32D	
WALL BUMPER				
FLOOR STOPS				
CHAIN DOOR CHECK				
MECHANICAL KEY PAD				
SADDLE THRESHOLD				
GASKETING SET				
SWEEPS				
DRIP CAP				
PEEP HOLE	DOOR VIEWER		26D	

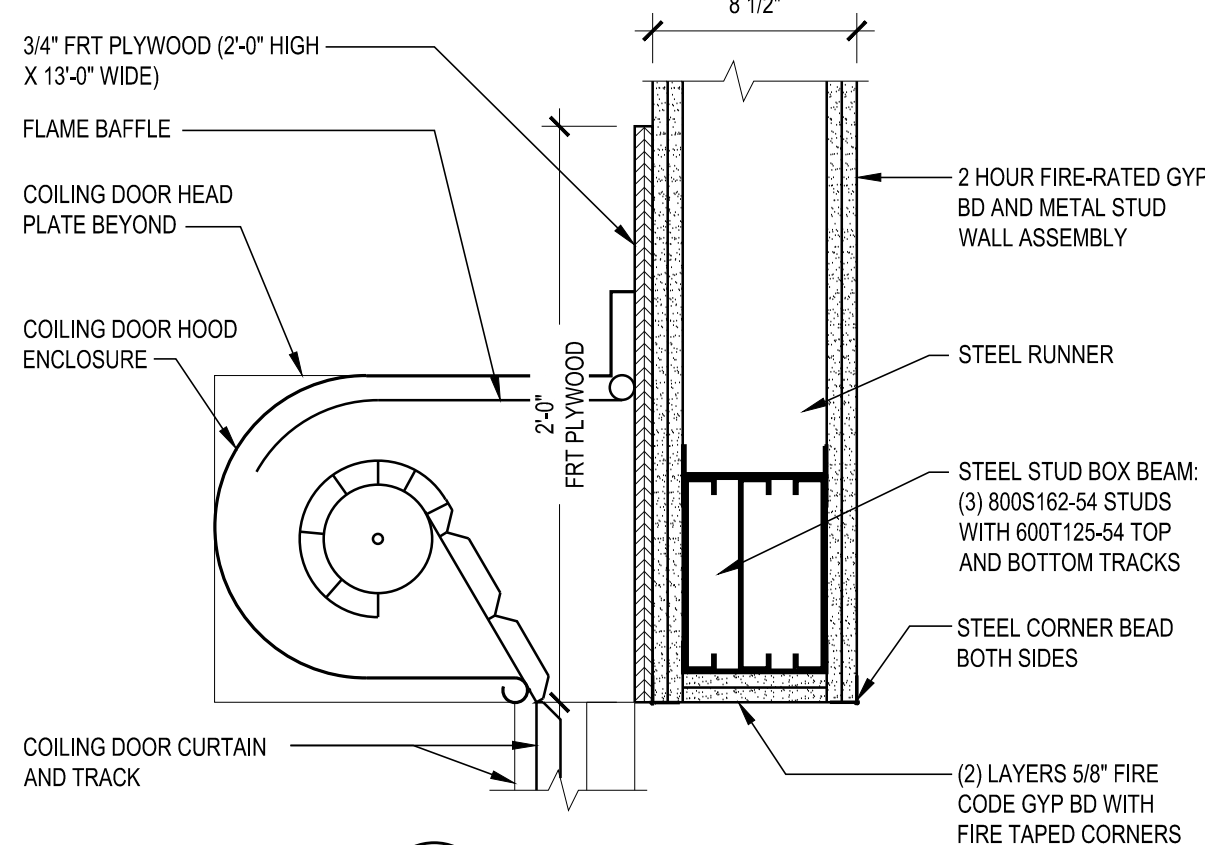
NGP = NATIONAL GUARD PRODUCT

HARDWARE FINISH SCHEDULE			
BHMA FINISH CODE	US EQUIV.	FINISH DESCRIPTION	BASE MATERIAL
609	US 302	SATIN CHROMIUM PLATED	BRASS/BRONZE
630	US 32D	SATIN STAINLESS STEEL	STAINLESS STEEL

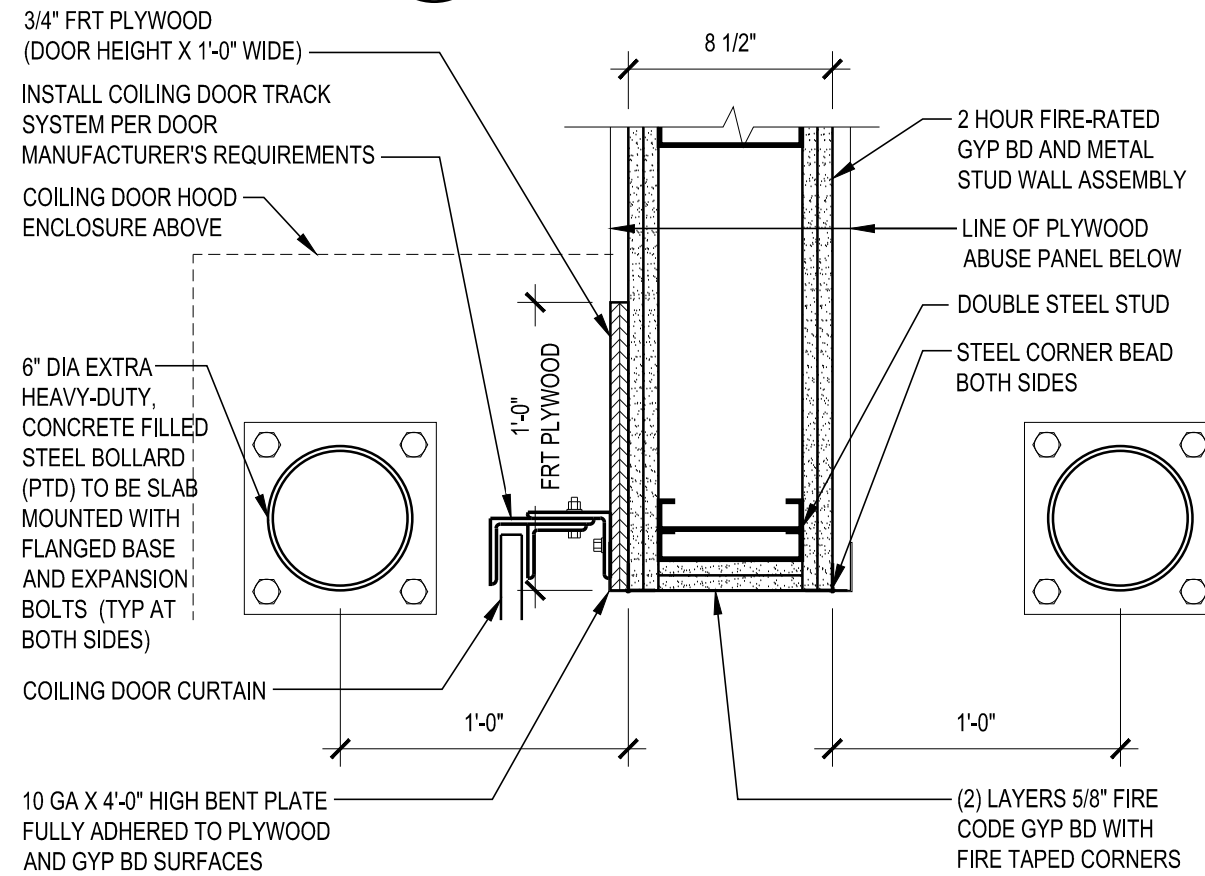
DOOR HARDWARE SETS

SET NO	SET ITEMS	SET NO	SET ITEMS	SET NO	SET ITEMS
12	(3) HINGES (1) A DETEX BATTERY POWERED ALARMED EXIT DEVICE WITH 15 SECOND DELAY. HARDWARE TO HAVE KEYPED ENTRY TRIM. (1) SURFACE CLOSER (1) BRUSH SWEEP SILENCERS PROVIDE KNOX BOX ON OUTSIDE WALL PER LOCAL FIRE DEPARTMENT STANDARDS.	7	(3) HINGES (1) LEVER PASSAGE LATCHSET (1) WALL BUMPER (1) CLOSER PARK OR KICK PLATES SILENCERS	1	(3) HINGES (1) STORAGE LEVER LOCKSET (1) CLOSER - STANDARD ARM (1) WALL BUMPER (2) 12" H x FULL WIDTH ST. STL. KICKPLATE SILENCERS
8	(3) HINGES (1) LEVER STOREROOM LOCKSET (1) ELECTRIC STRIKE (1) SURFACE CLOSER (1) WALL BUMPER SILENCERS WIRING DIAGRAM BY DOOR SECURITY CONTRACTOR (1) CARD READER BY DOOR SECURITY CONTRACTOR (1) POWER SUPPLY	2	ALL ITEMS SHALL BE AS PRODUCED BY OVERHEAD DOOR MFR. FOR EXTERIOR OR INTERIOR DOOR APPLICATIONS AND FURNISHED BY SUPPLIER.	3	(3) HINGES (1) LEVER PASSAGE LOCKSET (1) WALL BUMPER SILENCERS
9	REPLACE EXISTING STRIKE WITH (1) ELECTRIC STRIKE WIRING DIAGRAM BY DOOR SECURITY CONTRACTOR (1) CARD READER BY DOOR SECURITY CONTRACTOR (1) WALL BUMPER (1) POWER SUPPLY ALL OTHER EXISTING HARDWARE TO BE REFURBISHED.	4	(3) HINGES (1) PANIC EXIT DEVICE WITH PASSAGE LEVER TRIM (1) 12" H x FULL WIDTH ST. STL. KICKPLATE (2) WALL BUMPER (AT INSWING DOORS) SILENCERS WIRING DIAGRAM BY DOOR SECURITY CONTRACTOR (1) CARD READER BY DOOR SECURITY CONTRACTOR (1) POWER SUPPLY	5	(3) HINGES (1) PANIC DEVICE WITH LEVER TRIM (1) WALL BUMPER (1) CLOSER (1) KICK PLATE SILENCERS
10	(3) HINGES (1) LEVER OFFICE LOCKSET (1) WALL BUMPER SILENCERS	6	(3) HINGES (1) PUSH/PULL PLATES (1) CLOSER - STANDARD ARM (1) WALL BUMPER (2) 12" H x FULL WIDTH ST. STL. KICKPLATE SILENCERS		
11	REPLACE EXISTING PANIC BAR WITH A DETEX BATTERY POWERED ALARMED EXIT DEVICE WITH 15 SECOND DELAY. HARDWARE TO HAVE KEYPED ENTRY TRIM. PROVIDE KNOX BOX ON OUTSIDE WALL PER LOCAL FIRE DEPARTMENT STANDARDS. ALL OTHER EXISTING HARDWARE TO BE REFURBISHED.				

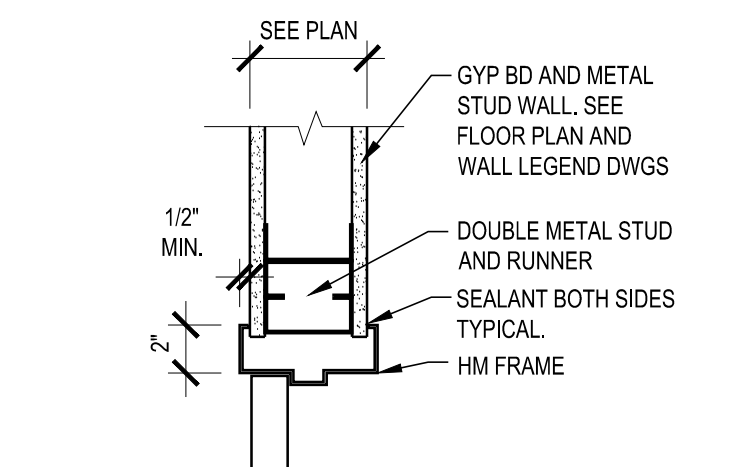
HEAD AND JAMB DETAILS



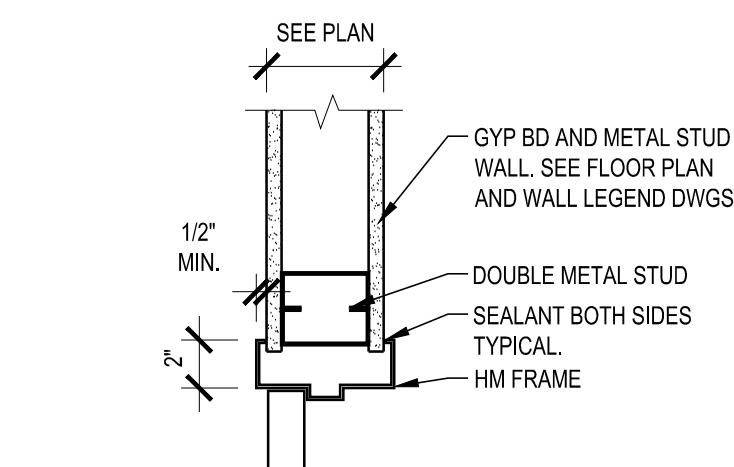
H1
1 1/2\"/>



J1
1 1/2\"/>



H2
1-1/2\"/>



J2
1-1/2\"/>

DOOR AND FRAME SCHEDULE

DOOR							FRAME	FIRE	HDWR	REMARKS	DOOR	
NO	TYPE	LOCATION	SIZE	MATERIAL	INSULATED	FINISH	TYPE	FINISH	RATING	SET NO	(SEE DOOR SCHEDULE REMARKS BELOW THIS SCHEDULE)	NO
100A	EX	VESTIBULE TO EXTERIOR	3'-0" x 7'-0" x1 3/4"	EX	-	-	-	-	-	9		100A
100B	NL	OPEN OFFICE TO VESTIBULE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	8		100B
101A	NL	WAREHOUSE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	5		101A
102A	F	OFFICE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	10		102A
103A	NL	BREAK ROOM TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	7		103A
104A	F	JC TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	1		104A
105A	F	OFFICE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	10		105A
106A	F	WOMEN TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	6		106A
107A	F	MEN TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	6		107A
110A	F	OFFICE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	10		110A
112A	F	CONFERENCE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	3		112A
113A	F	OFFICE TO OPEN OFFICE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	STAIN	HM	PAINT	-	10		113A
200A	F	WAREHOUSE TO EXTERIOR	3'-0" x 7'-0" x1 3/4"	HM	Y	PAINTED	HM	PAINT	-	12		200A
200B	EX	WAREHOUSE TO EXTERIOR	DRIVE-IN DOOR	EX	-	-	-	-	-	-		200B
300A	300A	LIQUID STORAGE TO WAREHOUSE	12'-0" x 14'-0" x1 3/4"	STEEL	-	-	STEEL	-	1.5 H.	2		300A
300B	300B	LIQUID STORAGE TO WAREHOUSE	3'-0" x 7'-0" x1 3/4"	SC WOOD	-	PAINTED	HM	PAINT	1.5 H.	4		300B
300C	EX	LIQUID STORAGE TO EXTERIOR	3'-0" x 7'-0" x1 3/4"	EX	-	-	-	-	-	11		300C
300D	EX	LIQUID STORAGE TO EXTERIOR	3'-0" x 7'-0" x1 3/4"	EX	-	-	-	-	-	11		300D
300E	EX	LIQUID STORAGE TO EXTERIOR	DOCK DOOR	EX	-	-	-	-	-	-		300E
300F	EX	LIQUID STORAGE TO EXTERIOR	DOCK DOOR	EX	-	-	-	-	-	-		300F
									</			

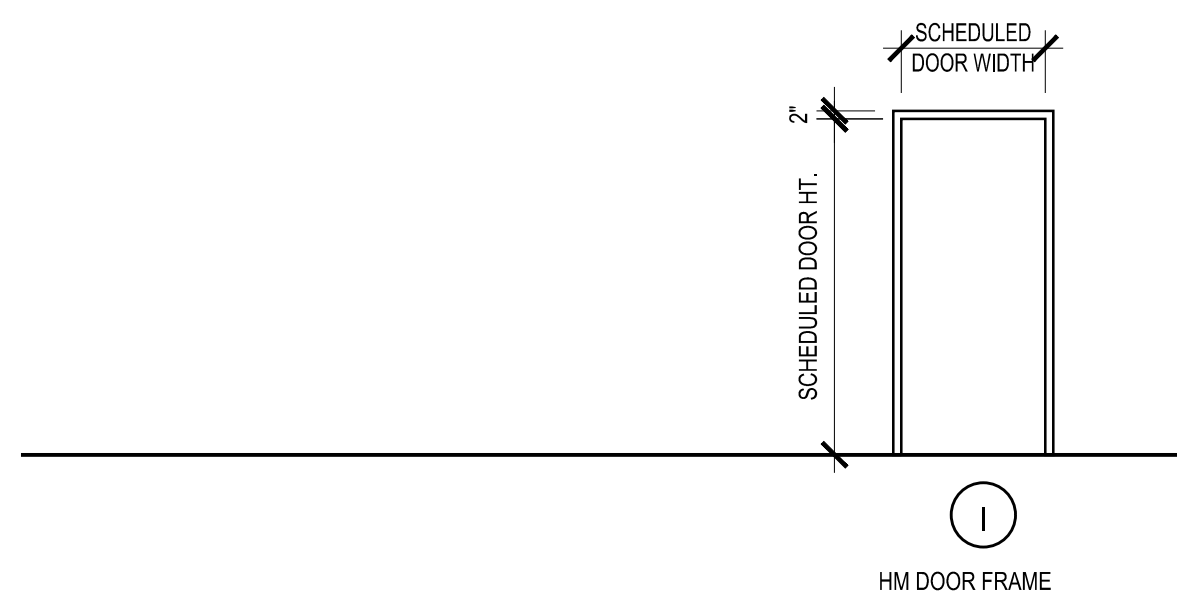
DOOR SCHEDULE REMARKS

- NOTE NOT USED.
- VERIFY WALL THICKNESS PRIOR TO ORDERING FRAME.

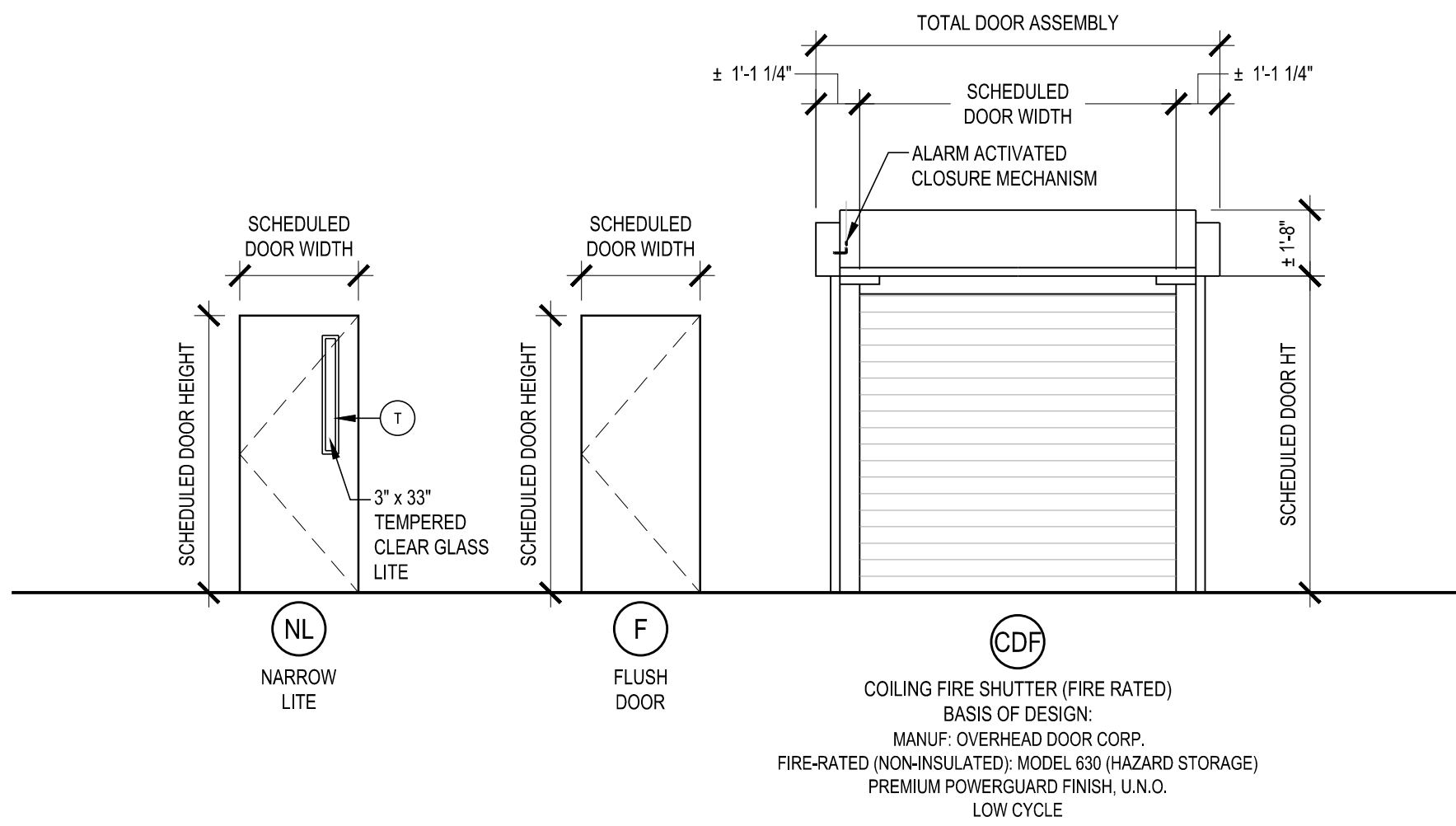
DOOR/FRAME TYPE NOTES

- INTERIOR DOOR AND SIDELIGHT GLASS TO BE 1/4\"/>
- Ⓢ INDICATES TEMPERED SAFETY GLASS.

FRAME TYPES



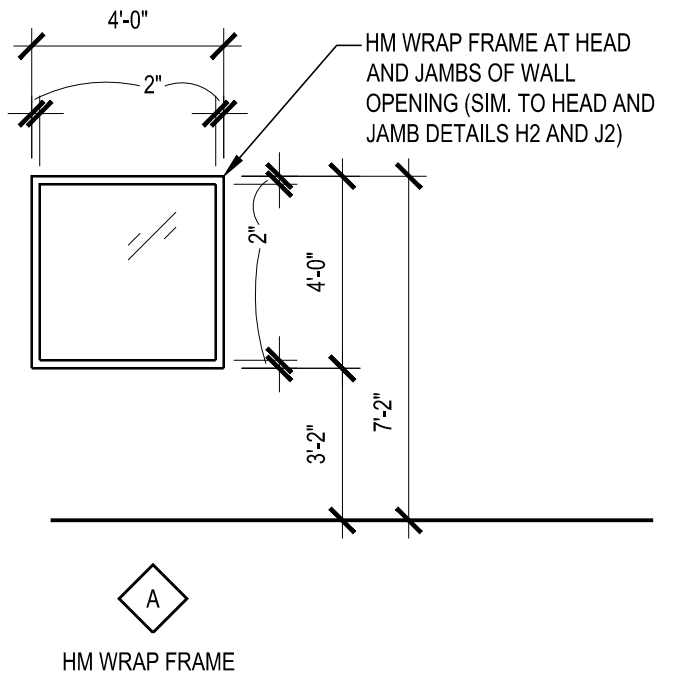
DOOR TYPES



WINDOW TYPE NOTES

- INTERIOR WINDOW GLASS TO BE 1/4\"/>
- INTERIOR DOOR SIDELIGHT GLASS TO BE 1/4\"/>
- Ⓢ INDICATES TEMPERED SAFETY GLASS.
- PAINT HM WINDOW FRAMES TO MATCH ADJACENT WALL COLOR (UNO).
- HM WINDOW FRAMES TO ABIDE BY APPLICABLE REQUIREMENTS LISTED IN THE GENERAL NOTES, THIS SHEET, FOR HM (DOOR) FRAMES.

WINDOW TYPES



SHEET #:

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PROJECT NOTES

EXTERIOR WALL PENETRATION NOTES:

1. PENETRATE EXTERIOR BUILDING WALLS AS REQUIRED TO FACILITATE INSTALLATION OF ITEMS INDICATED.

COORDINATION NOTES:

1. CERTAIN AREAS OF THE BUILDING UTILIZE RETURN AIR CEILING PLENUMS. ALL MATERIALS INSTALLED WITHIN THE CEILING PLENUMS SHALL COMPLY WITH NFPA 90A REQUIREMENTS.
2. UNLESS DETAILED OTHERWISE, SYSTEMS SHALL BE ORGANIZED SUCH THAT DUCTWORK MAINS ARE THE HIGHEST LEVEL AND ARE TIGHT TO BUILDING STEEL. HVAC PIPING AND PLUMBING PIPING SHALL BE ROUTED BELOW THE DUCTWORK MAINS, AND FIRE PROTECTION PIPING SHALL BE BELOW ALL.
3. THE BOTTOM ELEVATION OF ALL SYSTEMS SHALL BE AT LEAST 6" ABOVE LAY-IN CEILINGS OR 2" ABOVE LIGHTS TO FACILITATE CEILING TILE REMOVAL AND MAINTENANCE ACCESS.
4. SYSTEMS SHALL BE ARRANGED SUCH THAT THEY ARE NOT TOUCHING EACH OTHER OR ANY PART OF THE BUILDING STRUCTURE TO AVOID VIBRATION TRANSFERENCE AND EXPANSION INTERFERENCE, AND TO FACILITATE SYSTEM INSULATOR INSTALLATION (WHERE REQUIRED).

CEILING WORK NOTES:

1. REMOVE AND RE-INSTALL LAY-IN CEILINGS IN AREAS WHERE EXISTING CEILINGS ARE TO REMAIN AS REQUIRED TO COMPLETE THE INSTALLATION OF ITEMS SHOWN. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF AREAS WHERE EXISTING CEILINGS ARE TO REMAIN. REPLACE DAMAGED CEILING MATERIALS TO MATCH EXISTING CEILING.
2. CEILING TILES MAY BE LEFT OUT OF THE CEILING IN AREAS UNDER CONSTRUCTION ONLY IF STORED IN AREAS AS DIRECTED BY THE OWNER SO AS NOT TO HINDER THE DAILY OPERATIONS OF THE BUILDING'S OCCUPANTS.
3. REMOVE EXISTING DRYWALL OR PLASTER CEILINGS TO ACCOMMODATE INSTALLATION OF ITEMS INDICATED. PATCH AND PAINT DRYWALL OR PLASTER CEILINGS TO MATCH EXISTING ADJACENT UNDISTURBED SURFACES.
4. PROVIDE ESCUTCHEONS FOR ALL PIPING PENETRATIONS OF CEILINGS IN OCCUPIED AREAS.
5. FIRESTOP ALL PENETRATIONS OF RATED CEILINGS WITH THE APPROPRIATE FIRESTOPPING MATERIAL. REQUIRED MATERIALS ARE INDICATED IN THE SPECIFICATIONS

SLAB ON GRADE FLOOR PENETRATION NOTES:

1. CUT AND PATCH EXISTING FLOOR SLAB TO FACILITATE INSTALLATION OF UNDERFLOOR ITEMS INDICATED.
2. PATCH WITH MATERIALS SUITABLE FOR THE APPLICATION AND OF EQUAL STRENGTH AND THICKNESS AS ADJACENT UNDISTURBED SURFACES.
3. CUTTING AND PATCHING OF EXISTING FLOOR SLABS SHALL BE PROVIDED BY THE CONTRACTOR REQUIRING THE WORK. COORDINATE LOCATIONS AND AREAS OF SLAB REMOVAL WITH OTHERS TO FACILITATE INSTALLATION OF UNDERFLOOR ITEMS INDICATED.

ROOF PENETRATION NOTES:

1. CUT AND PATCH THE EXISTING ROOF AS REQUIRED TO FACILITATE INSTALLATION OF ROOF MOUNTED EQUIPMENT, SUPPORTS, AND PENETRATIONS INDICATED.
2. THE EXISTING ROOF IS UNDER WARRANTY. ALL ROOF WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE VALIDITY OF THE CURRENT WARRANTY.
3. CUTTING AND PATCHING OF EXISTING ROOF SHALL BE PROVIDED BY THE CONTRACTOR REQUIRING THE WORK. COORDINATE LOCATIONS AND AREAS OF ROOFING SYSTEM REMOVAL WITH OTHERS TO FACILITATE INSTALLATION OF ROOF MOUNTED ITEMS INDICATED.
4. ROOF PENETRATIONS SHALL BE MADE IN ACCORDANCE WITH ARCHITECT/STRUCTURAL ENGINEER'S DESIGN REQUIREMENTS.
5. OBTAIN APPROVAL OF LOCATION AND PENETRATION METHOD PRIOR TO CREATING ROOF PENETRATIONS.

INTERIOR WALL PENETRATION NOTES:

1. PENETRATE INTERIOR BUILDING WALLS AS REQUIRED TO FACILITATE INSTALLATION OF ITEMS INDICATED.
2. PATCH AND PAINT EXISTING WALLS TO MATCH ADJACENT UNDISTURBED SURFACES.
3. FIRESTOP PENETRATIONS OF RATED WALLS WITH APPROPRIATE SPECIFIED FIREPROOFING MATERIAL AND SEALING METHODS.
4. SOUND STOP FULL HEIGHT WALLS WITH APPROPRIATE MATERIALS AND METHODS AND AS INDICATED IN THE "PENETRATIONS" SECTION OF THE SPECIFICATIONS.
5. MAKE WALL PENETRATIONS LARGE ENOUGH TO ALLOW INSULATED PIPES AND/OR DUCTS TO PASS THROUGH WITHOUT INTERRUPTION OF INSULATION.
6. ALLOW A MINIMUM 3" CLEARANCE AROUND ALL SIDES BETWEEN DUCT SURFACE AND ANY WALL STUDS OR HEADERS TO AVOID TRANSFERENCE OF VIBRATION TO STRUCTURE.

HVAC PIPE AND FITTING SCHEDULE

* WHERE MORE THAN ONE TYPE OF MATERIAL IS INDICATED AS AN OPTION, SELECTION IS INSTALLER'S CHOICE.

SERVICE	SIZE	PIPE MATERIAL	FITTINGS	JOINTS
REFRIGERANT PIPING	ALL SIZES	TYPE L HARD COPPER	WROUGHT COPPER	BRAZED

FIRESTOP SCHEDULE

NOTES:

1. FIRESTOP ASSEMBLY TYPE (REQUIRED FIRESTOPPING MATERIALS) SHALL BE DETERMINED BY THE WALL OR FLOOR/CEILING ASSEMBLY AND PENETRATION TYPE AND SHALL BE UL LISTED AND TESTED IN ACCORDANCE WITH ASTM E814. FIRE RATING OF THE ASSEMBLY SHALL BE EQUIVALENT TO THE WALL OR FLOOR/CEILING ASSEMBLY RATING.
2. ACCEPTABLE FIRE BARRIER PRODUCTS: HILTI "FS-ONE", NELSON "FLAMESEAL" OR APPROVED EQUAL AS MANUFACTURED BY 3M.
3. IF REQUESTED, THE CONTRACTOR SHALL SHOW PROOF OF COMPLIANCE BY PROVIDING THE APPROPRIATE UL FIRESTOPPING SYSTEM NUMBER TO THE INSPECTION AUTHORITY HAVING JURISDICTION OR THE ARCHITECT/ENGINEER.

PENETRATION	RATING	U.L. SYSTEM
METAL DUCT WITHOUT FIRE DAMPER THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL7040 OR #WL7042 OR APPROVED EQUAL
METAL DUCT WITHOUT FIRE DAMPER THROUGH MASONRY/CONCRETE	1 OR 2 HOUR	HILTI UL #WJ7021 OR #WJ7022 OR APPROVED EQUAL
METAL DUCT WITHOUT FIRE DAMPER THROUGH MASONRY/CONCRETE	3 HOUR	HILTI UL #CAJ7046 OR APPROVED EQUAL
METAL PIPE THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL1054 OR APPROVED EQUAL
METAL PIPE THROUGH MASONRY/CONCRETE	2 HOUR	HILTI UL #CAJ1291 OR APPROVED EQUAL
METAL PIPE THROUGH MASONRY/CONCRETE	3 HOUR	HILTI UL #CAJ1155 OR #CAJ1226 OR APPROVED EQUAL
METAL PIPE THROUGH POURED CONCRETE FLOOR SLAB	3 HOUR	HILTI UL #FA1017 OR APPROVED EQUAL
INSULATED METAL PIPE THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL5029 OR APPROVED EQUAL
INSULATED METAL PIPE THROUGH MASONRY/CONCRETE	2 HOUR	HILTI UL #CAJ5091 OR APPROVED EQUAL
INSULATED METAL PIPE THROUGH MASONRY	4 HOUR	HILTI UL #WJ5028 OR APPROVED EQUAL
INSULATED METAL PIPE THROUGH POURED CONCRETE FLOOR SLAB	2 HOUR	HILTI UL #FA5017 OR APPROVED EQUAL
PLASTIC PIPE THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL2078 OR APPROVED EQUAL
PLASTIC PIPE THROUGH MASONRY/CONCRETE	2 HOUR	HILTI UL #CAJ2271 OR APPROVED EQUAL
PLASTIC PIPE THROUGH MASONRY/CONCRETE	3 HOUR	HILTI UL #CAJ2109 OR #CAJ2110 OR APPROVED EQUAL
PLASTIC PIPE THROUGH POURED CONCRETE FLOOR SLAB	3 HOUR	HILTI UL #FA2054 OR APPROVED EQUAL

HVAC INSULATION SCHEDULE

INSULATION TYPE DESCRIPTIONS

FD	FLEXIBLE DUCT WRAP INSULATION; MINIMUM THERMAL CONDUCTIVITY OF R = 7.4 WITH A DERATED VALVE OF R = 6.0 AT 70 DEG. F. MEAN TEMPERATURE WHEN COMPRESSED 25%. DENSITY = 0.75 POUNDS PER CUBIC FOOT.
EP	FLEXIBLE UNICELLULAR, PREFORMED ELASTOMERIC PIPE INSULATION; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.
EF	FLEXIBLE, CLOSED-CELL, CFC-FREE, FACTORY INSTALLED MOLDED ELASTOMERIC PIPE INSULATION; THERMAL CONDUCTIVITY K = 0.30 AT 70 DEG. MEAN TEMPERATURE; WATER VAPOR TRANSMISSION = 0.08 PERM-INCH, UV-RESISTANT FOR OUTDOOR APPLICATIONS.

INSULATION FINISH DESCRIPTIONS

FFV	FOIL FACED KRAFT PAPER VAPOR SEAL, FACTORY APPLIED
-----	--

SERVICE	TYPE	THICKNESS	FINISH
COMBUSTION AND OUTSIDE AIR DUCTWORK	FD	3"	FFV
SUPPLY, MIXED AND RELIEF AIR DUCTWORK	FD	2"	FFV
SUPPLY, RETURN, MIXED AND RELIEF AIR DUCTWORK (IN NON-AIR CONDITIONED SPACE)	FD	3"	FFV
COOLING COIL CONDENSATE DRAIN PIPING (NOT IN AIR-HANDLING UNIT)	EP	1/2"	-
REFRIGERANT LINESET (MINI-SPLIT AND VRF SYSTEMS)	EF	1/2"	-

ABBREVIATIONS

LEGEND - MECHANICAL ABBREVIATION SCHEDULE1

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING
ACC	AIR COOLED CONDENSER
ACD	AIR COMPRESSOR DRYER
ACU	AIR CURTAIN UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFMS	AIRFLOW MEASURING STATION
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
APD	AIR PRESSURE DROP (INCHES OF WATER COLUMN)
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
B	BOILER
BD	BACKDRAFT DAMPER
BFG	BELOW FINISHED GRADE
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CO	CARBON MONOXIDE
CO	CLEANOUT
CO2	CARBON DIOXIDE
COMP	COMPRESSOR
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CT	COOLING TOWER
CJ	CONDENSING UNIT
CJH	CABINET UNIT HEATER
D	DEEP
DA	DEARATOR
DACU	DUCTLESS AIR CONDITIONING UNIT
DB	DRY BULB
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DD	DUAL DUCT TERMINAL BOX
DD	DUCT MOUNTED SMOKE DETECTOR
DDC	DIRECT DIGITAL CONTROL
DEG F	DEGREES FARENHEIT
DEMO	DEMOLITION
DIA	DIAMETER
DOWN	DOWN
DP	DIFFERENTIAL PRESSURE
DTF	DOWN THROUGH FLOOR
DTR	DOWN THROUGH ROOF
DWG	DRAWING
DX	DIRECT EXPANSION
E	EAST
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE (DEG F)
EBB	ELECTRIC BASE BOARD
EC	ELECTRICAL CONTRACTOR
ECH	ELECTRICAL CABINET UNIT HEATER
ECU	ENVIRONMENTAL CONTROL UNIT
EDB	ENTERING DRY BULB
EDH	ELECTRIC DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EH	ELECTRIC HEATER
ERU	ENERGY RECOVERY UNIT
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETC	ET CETERA
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET BULB
EWI	ELECTRIC WALL HEATER
EWT	ENTERING WATER TEMPERATURE (DEG F)
F	FURNACE
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FILT	FILTER
FLA	FULL LOAD AMPS
FP	FIRE PROTECTION
FPC	FIRE PROTECTION CONTRACTOR
FFM	FEET PER MINUTE
FPBT	FAN POWERED TERMINAL BOX
FSD	COMBINATION FIRE/SMOKE DAMPER
FT	FEET
FTK	FLASH TANK
FTR	FINNED TUBE RADIATION
GAL	GALLON
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GV	GRAVITY VENTILATOR
H	HUMIDIFIER
HC	HEATING COIL
HOOD	HOOD
HEAD	FEET OF WATER COLUMN PRESSURE
HEPA	HIGH EFFICIENCY PARTICULATE AIR
HOA	HAND-OFF-AUTOMATIC
HP	HEAT PUMP
HP	HORSEPOWER
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
HZ	HERTZ (CYCLES PER SECOND)
IFB	INTEGRAL FACE AND BYPASS
IN	INCH
INV	INVERT ELEVATION

LEGEND - MECHANICAL ABBREVIATION SCHEDULE1

ABBREVIATION	DESCRIPTION
KW	KILOWATT
L	LENGTH
L	LOUVER
LAT	LEAVING AIR TEMPERATURE (DEG F)
LBS	POUNDS
LF	LINEAR FOOT
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE (DEG F)
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MRR	MANUFACTURER
MFS	MINIMUM FUSE SIZE
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MOP	MAXIMUM OVERCURRENT PROTECTION
MZU	MULTIZONE UNIT
N	NORTH
NA, N/A	NOT APPLICABLE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN
NO	NUMBER
NPT	NOMINAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OAT	OUTDOOR AIR TEMPERATURE
P	PUMP
PBD	PARALLEL BLADE DAMPER
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PRV	HYDRONIC PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RA	RETURN AIR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
RV	RELIEF VALVE
S	SOUTH
SA	SOUND ATTENUATOR
SA	SUPPLY AIR
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SQUARE FEET
SF	SUPPLY FAN
SMACNA	SHEET METAL AND AIRCONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SPECS	SPECIFICATIONS
SPRS	STEAM PRESSURE REDUCING STATION
SPRV	STEAM PRESSURE REDUCING VALVE
SQ	SQUARE
SS	STAINLESS STEEL
SST	SATURATED SUCTION TEMPERATURE
T&P	TEMPERATURE AND PRESSURE
T-STAT	THERMOSTAT
TA	TRANSFER AIR
TB	TERMINAL BOX
TC	TEMPERATURE CONTROL
TCC	(TEMPERATURE) CONTROL CONTRACTOR
TCP	(TEMPERATURE) CONTROL PANEL
TEMP	TEMPERATURE (DEG F)
TOO	TOP OF DUCT
TOP	TOP OF PIPE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UTF	UP THROUGH FLOOR
UTR	UP THROUGH ROOF
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VCT	VITREOUS CLAY TILE
VFD	VARIABLE FREQUENCY DRIVE
VFB	VERTICAL INTEGRAL FACE AND BYPASS
VTR	VENT THROUGH ROOF
VVT	VARIABLE VOLUME AND TEMPERATURE
W	WATTS
W	WEST
W	WIDE
WB	WET BULB
WC	INCHES WATER COLUMN (PRESSURE)
WG	WATER GAUGE (PRESSURE)
WPD	WATER PRESSURE DROP (FEET OF WATER COLUMN)
WSA	WIRE SIZE AMPS

DRAWING LIST

DRAWING LIST - MECHANICAL

SHEET NUMBER	SHEET NAME
M0.01	GENERAL INFORMATION
M1.01	FIRST FLOOR MECHANICAL DEMOLITION PLAN
M2.01	FIRST FLOOR MECHANICAL PLAN
M3.01	FIRST FLOOR ENLARGED MECHANICAL PLANS
M4.01	MECHANICAL SCHEDULES AND DETAILS
M5.01	MECHANICAL SPECIFICATIONS
M5.02	MECHANICAL SPECIFICATIONS

REFERENCE SYMBOLS

REFERENCE SYMBOL LEGEND

	VIEW NUMBER ON SHEET SHEET REFERENCE	DETAIL CALLOUT
	VIEW NUMBER ON SHEET SHEET REFERENCE	SECTION AND ELEVATION CALLOUT
	VIEW NUMBER ON SHEET SHEET REFERENCE	ENLARGED PLAN CALLOUT
	VIEW NUMBER ON SHEET SHEET REFERENCE	CONTINUATION CALLOUT

SHEET NOTES

DRAWING INTERPRETATION NOTES:

1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
2. DEMOLITION LINETYPE: THICK (DARK) DASHED LINES REPRESENT EXISTING ITEMS TO BE REMOVED.
3. NEW LINETYPE: THICK (DARK) SOLID LINES REPRESENT ITEMS THAT ARE NEW OR RELOCATED.
4. RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATION(S). NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS ARE OBSERVED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
5. EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
6. EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).

DUCT LINETYPE SCHEDULE

ABBREVIATION	DESCRIPTION	MATERIAL
CA	COMBUSTION AIR	GALVANIZED
EA	EXHAUST AIR	GALVANIZED
FLUE	FUEL-BURNING APPLIANCE FLUE VENT	TYPE B DOUBLE WALL
OA	OUTDOOR AIR	GALVANIZED
RA	RETURN AIR	GALVANIZED
SA	SUPPLY AIR	GALVANIZED
TA	TRANSFER AIR	GALVANIZED

TENANT IMPROVEMENTS FOR:

SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 08/15/2025

PROJECT# 016-0402
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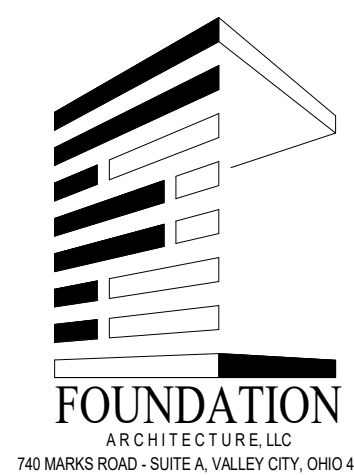
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DRAWING TITLE:
GENERAL INFORMATION

SHEET #:
M0.01



SEAR



275 Springside Dr., Suite 300
Akron, Ohio 44333
Phone: 330-666-3702
ptaengineering.com

PROJECT

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

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PROJECT #: 016-0402

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DRAWING TITLE:
FIRST FLOOR
MECHANICAL
DEMOLITION PLAN

SHEET #

M1.01

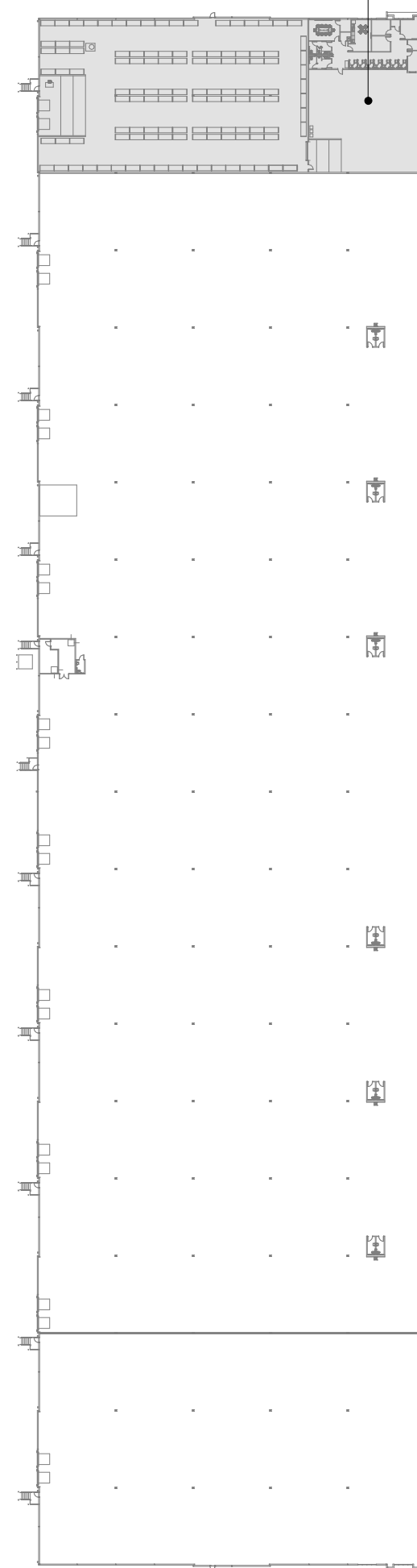
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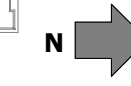
DUCTWORK DEMOLITION NOTES:

1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL SALVAGED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL DUCTWORK, AS INDICATED BY THE DEMOLITION LINETYPE. REMOVE ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE DUCTWORK BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE DUCTWORK BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED DUCTS THE SAME AS NEW.

SHADING INDICATES WORK AREA



KEY PLAN
NO SCALE

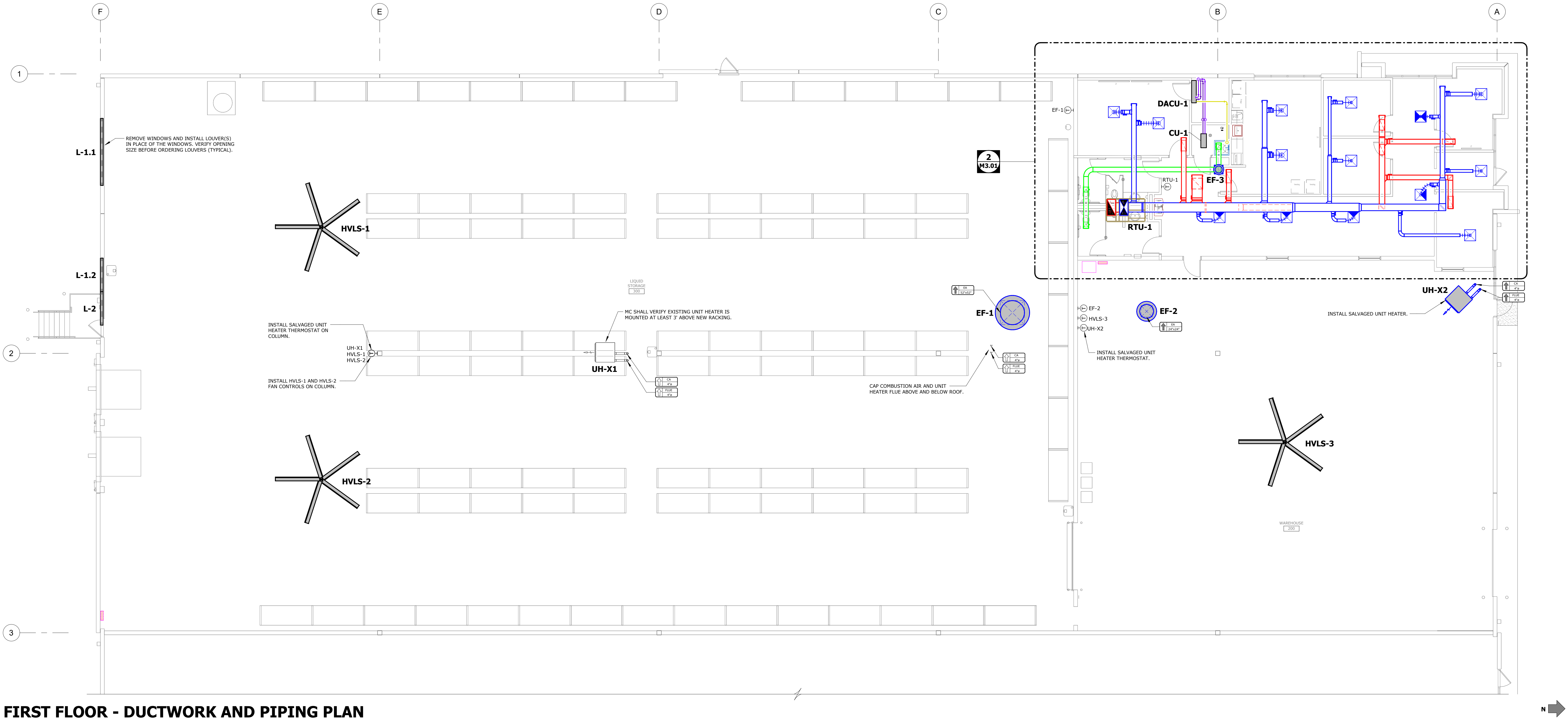


FIRST FLOOR - DUCTWORK AND PIPING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

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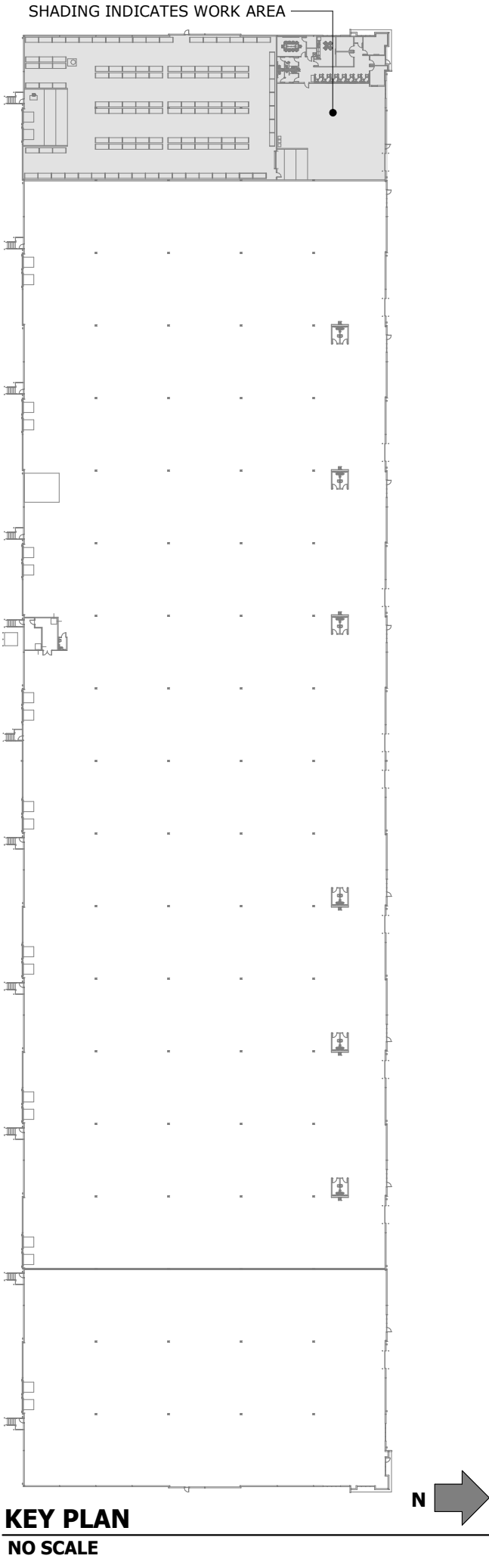


FIRST FLOOR - DUCTWORK AND PIPING PLAN

SCALE: 1/8" = 1'-0"

- DRAWING INTERPRETATION NOTES:**
- EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
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 - EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
 - EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).

- DUCTWORK NEW WORK NOTES:**
- BRANCH DUCTWORK RUNOUTS TO GRILLES/DIFFUSERS SHALL BE THE NECK SIZE OF THE GRILLE/DIFFUSER, UNLESS NOTED OTHERWISE.
 - DUCT SIZES NOTED REPRESENT THE ACTUAL SHEET METAL SIZE. WHERE INTERIOR DUCT LINING IS USED, DUCT SIZES HAVE ALREADY ACCOUNTED FOR THE LINING.
 - SEE SHEETMETAL FITTING DETAILS FOR FITTING CONSTRUCTION REQUIREMENTS. CONSULT ENGINEER IF UNCERTAIN WHICH TYPE OF FITTING IS REQUIRED IN A SPECIFIC LOCATION.
 - DO NOT INSTALL ANY DUCTWORK BENEATH OR ADJACENT TO ANY EQUIPMENT THAT WOULD HINDER MAINTENANCE ACCESS TO EQUIPMENT OR THE FUTURE REMOVAL OF EQUIPMENT.



KEY PLAN
NO SCALE

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
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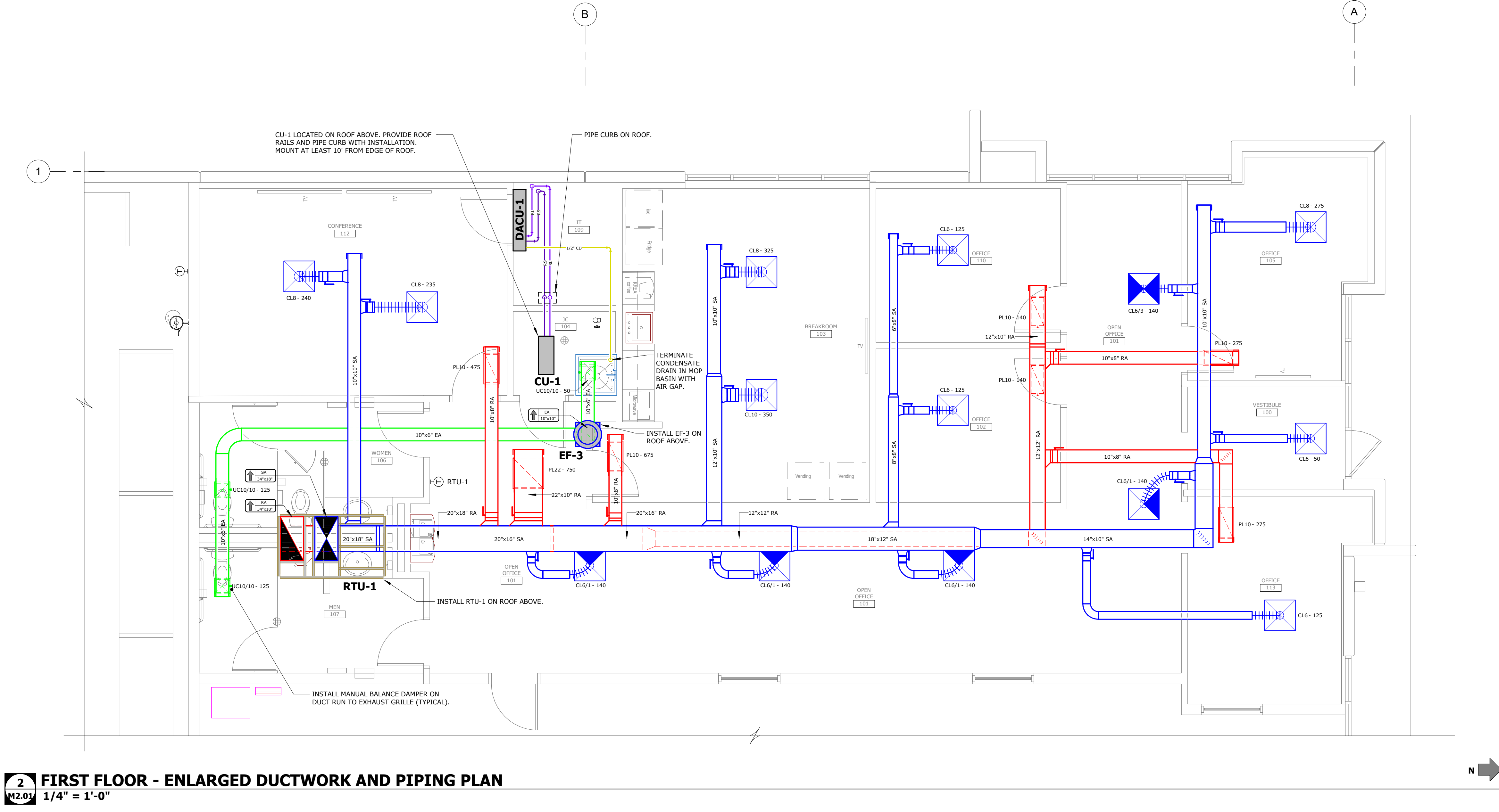
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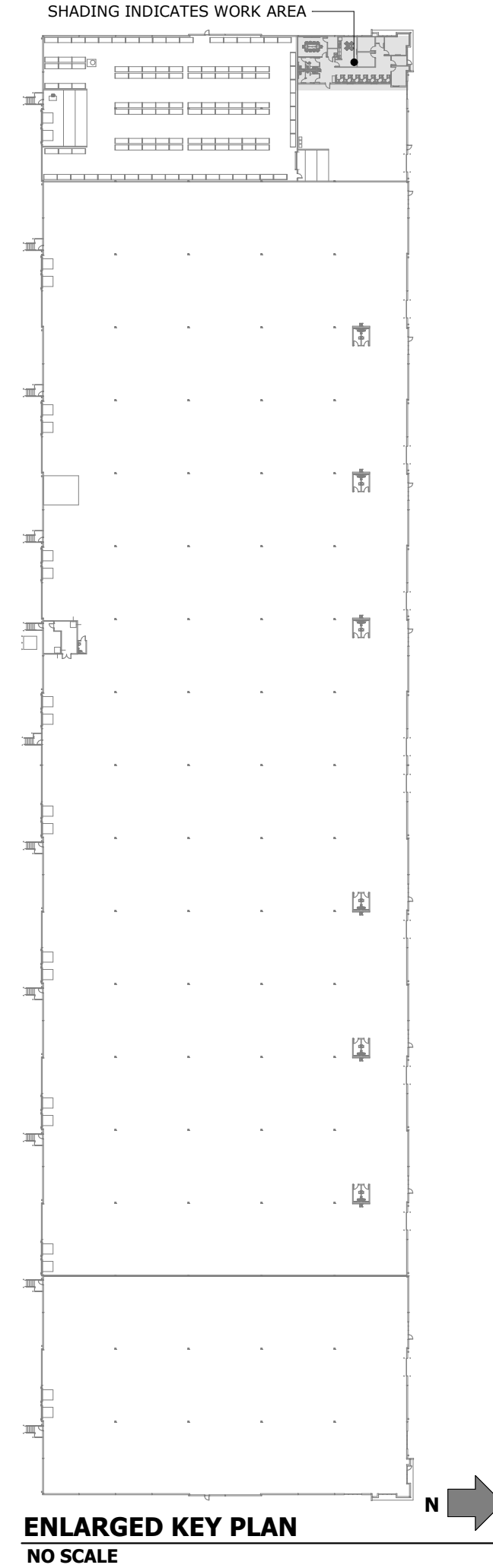
DRAWING TITLE:
FIRST FLOOR
MECHANICAL PLAN

SHEET #:
M2.01



2 FIRST FLOOR - ENLARGED DUCTWORK AND PIPING PLAN
1/4" = 1'-0"

- DRAWING INTERPRETATION NOTES:**
1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
 2. RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATION(S). NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBSCURED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
 3. EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
- DUCTWORK NEW WORK NOTES:**
1. BRANCH DUCTWORK RUNOUTS TO GRILLES/DIFFUSERS SHALL BE THE NECK SIZE OF THE GRILLE/DIFFUSER, UNLESS NOTED OTHERWISE.
 2. DUCT SIZES NOTED REPRESENT THE ACTUAL SHEET METAL SIZE. WHERE INTERIOR DUCT LINING IS USED, DUCT SIZES HAVE ALREADY ACCOUNTED FOR THE LINING.
 3. SEE SHEETMETAL FITTING DETAILS FOR FITTING CONSTRUCTION REQUIREMENTS. CONSULT ENGINEER IF UNCERTAIN WHICH TYPE OF FITTING IS REQUIRED IN A SPECIFIC LOCATION.
 4. DO NOT INSTALL ANY DUCTWORK BENEATH OR ADJACENT TO ANY EQUIPMENT THAT WOULD HINDER MAINTENANCE ACCESS TO EQUIPMENT OR THE FUTURE REMOVAL OF EQUIPMENT.
- REFRIGERANT SYSTEM NEW WORK NOTES:**
1. CONSULT WITH EQUIPMENT MANUFACTURER FOR FINAL REQUIRED PIPE SIZES. ANY SIZES SHOWN ON THESE DOCUMENTS SHALL BE CONSIDERED APPROXIMATE, FOR PRICING PURPOSES ONLY.



RELEASED FOR PUBLIC REVIEW
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
08/18/2025

STATE OF MISSOURI
PATRICK W. KLANAC
NUMBER 23269
EXPIRATION DATE 8-11-2025
PROFESSIONAL ENGINEER

SEAL

FOUNDATION
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THE MARSH ROAD, SUITE A, VALLEY CITY, OHIO 44269

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PROJECT:

TENANT IMPROVEMENTS FOR:
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2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

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DRAWING TITLE:
FIRST FLOOR
ENLARGED MECHANICAL
PLANS

SHEET #:
M3.01

2 HVLS FAN CONTROL
NO SCALE

HVLS FAN SCHEDULE									
REMARKS:									
MARK	MANUFACTURER	MODEL	TYPE	CFM	COVERAGE AREA (SF)	IMPELLER DIA (FT)	FAN RPM	ELECTRICAL DATA	
								FLA	VOLTS/PHASE DISCONNECT SWITCH
HVLS-1	GREENHECK	DS-3-16-70HV	HIGH VOLUME, LOW SPEED CEILING FAN	102,560	8,750	16	97	2.5	460/3 BY EC
HVLS-2	GREENHECK	DS-3-16-70HV	HIGH VOLUME, LOW SPEED CEILING FAN	102,560	8,750	16	97	2.5	460/3 BY EC
HVLS-3	GREENHECK	DS-3-16-70HV	HIGH VOLUME, LOW SPEED CEILING FAN	60,759	5,100	18	87	2.5	460/3 BY EC



AIR COOLED CONDENSING UNITS (CU)															
MARK	MANUFACTURER	MODEL	COOLING MBH	HEATING MBH	AMBIENT TEMPERATURE		REFRIGERANT		ELECTRICAL DATA				ASSOCIATED UNIT	WEIGHT	
					DESIGN	LOW	TYPE	TYPE	HERZ	VOLTS/PHASE	HVA	HVCP			DISCONNECT BY
CU-1	TRANE	TRU2A0121KA70NA	12,000	18,000	95°F	DB/75°F	W 0°F	R410A	13.3	208/230-1	11.0	28	BY EC	DAU-1	93 LBS



MMC Outdoor Air (OA)								
Room Name	Classification	Area (ft ²)	# of Pp	OA per person	OA per SF	Min. OA CFM	Min. OA Driven CFM	SELECTED MAX CFM
Office 105	Office Space	152	4	5	0.06	14	275	118
Vestibule	Main Entry Lobby	68	1	5	0.06	4	34	50
Office 113	Office Space	142	1	5	0.06	14	113	125
Open Office 101	Office Space	757	7	5	0.06	80	670	700
Office 110	Office Space	120	1	5	0.06	12	102	125
Office 102	Office Space	120	1	5	0.06	12	102	125
Breakroom 103	Multipurpose Assembly	344	4	5	0.06	41	339	675
Conference	Office Space	269	8	5	0.06	56	468	475

23 60 10 - PACKAGED RTU SCHEDULE (PART 1)													
NOTES: 1. PROVIDE WITH THROUGH THE BASE ELECTRIC. 2. PROVIDE WITH NON-FUSIBLE DISCONNECT. 3. PROVIDE WITH 2" MERV 6 FILTERS.					OPTIONS/ACCESSORIES: 1. PROVIDE WITH PROGRAMMABLE THERMOSTAT. 2. PROVIDE WITH POWERED GFCI, 120V/5A, 2 PLUS, CONVENIENCE OUTLET WITH A SERVICE RECEPTACLE DISCONNECT. 3. PROVIDE WITH ECONOMIZER WITH BAROMETRIC RELIEF. 4. PROVIDE WITH MODULATING HOT GAS HEAT.								
GENERAL					SUPPLY FAN DATA								
MARK	MANUFACTURER	MODEL	SUPPLY	OA	WEIGHT	ESP	TSP	FAN TYPE	FAN RPM	DRIVE	BHP	MHP	OPTIONS/ACCESSORIES
	TRAINE	YSQ022A850H	2600	31.7		0.75 @ 1.0 IN. WC	1.0 @ 1.2 IN. WC	PC 120 21 1/2			0.330		

23 60 10 - PACKAGED RTU SCHEDULE (PART 2)																										
NOTES: 1.														OPTIONS/ACCESSORIES: 1.												
DIRECT EXPANSION COOLING COIL DATA														GAS HEAT									FILTER		ELECTRICAL DATA	
		ENTERING AIR		LEAVING AIR		STAGES OF COOLING		QTY. OF REFRIGERANT CIRCUITS		REFRIGERANT		COMPRESSOR		EFFICIENCY DATA												
MARK	TOTAL MBH	SENSIBLE MBH	DRY BULB	WET BULB	DRY BULB	WET BULB					QUANTITY	TYPE	FEER	IEER/SEER	EAT	LAT	MAX INPUT (MBH)	MAX OUTPUT (MBH)	EFFICIENCY	THICKNESS	VOLTS/PHASE	MCA	MOCF			
RTU-1	80.66	66.01	81.24 °F	66.43 °F	57.49 °F	56.41 °F	3	1		R-454B	2	SCROLL	11.0	14.6	52.32 °F	75.10 °F	80.0	64.80	MERV 8	2"	460/3	20	25			



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MECHANICAL SPECIFICATIONS (CONTINUED)

- 23 20 20 FLEXIBLE DUCTWORK
- R. THE LAST 36" HORIZONTAL OR VERTICAL CONNECTION TO EACH DIFFUSER MAY BE MADE OF 4" PRESSURE CLASS FLEXIBLE DUCT WITH EXTERIOR FIBERGLASS INSULATION.
- S. ACCEPTABLE MANUFACTURERS: ATCO - TYPE UPC 070, CLEVAFLEX - TYPE KQ, OR FLEXMASTER - TYPE 1B.
- 23 21 10 DUCTWORK INSULATION
- T. EACH CONTRACTOR SHALL FURNISH AND INSTALL ALL INSULATION NECESSARY TO THE PROJECT AND IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. ALL INSULATION AND ACCESSORIES USED SHALL HAVE A COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED UNDER PROCEDURE ASTM E-84, NFPA 255 AND UL 723, NOT EXCEEDING A FLAME SPREAD 25 AND SMOKE DEVELOPED 50. INSULATION SHALL BE RATED FOR INSTALLATION IN PLENUM CEILINGS.
- U. MATERIALS:
- (1) ALL INSULATION WORK SHALL BE INSTALLED WHERE INDICATED IN THE INSULATION SCHEDULE AND SHALL BE OF THE THICKNESS AND MATERIALS CONFORMING WITH THE INSULATION SCHEDULE.
- V. ACCEPTABLE MANUFACTURERS FOR FIBERGLASS INSULATION PRODUCTS: OWENS CORNING, KNAUF, CERTAINTEED, OR JOHNS MANVILLE.
- W. ACCEPTABLE MANUFACTURERS FOR CLOSED-CELL ELASTOMERIC AND POLYMERIC INSULATION PRODUCTS: AEROCCEL, MINNCELL, HULSTAD, NOMACO, OR RUBATLEX.
- X. IN ADDITION TO THE INSULATION AND NORMAL FINISH, ALL OUTDOOR PIPING SHALL BE COVERED WITH A PRE-FABRICATED SELF-ADHERING, SHEET-TYPE WATERPROOFING MEMBRANE. THE MEMBRANE SHALL BE UV-RESISTANT, EXCEED A 25/50 FLAME-SMOKE RATING, AND BE DESIGNED SPECIFICALLY FOR EXTERIOR USE. THE ENTIRE ASSEMBLY SHALL BE WEATHERPROOF (WATER IMPERMEABLE) AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- (1) ACCEPTABLE WATERPROOFING MEMBRANE PRODUCTS: FLEXCLAD 400 MANUFACTURED BY MFM BUILDING PRODUCTS CORP., VENTRUCLEAD 1577 CW MANUFACTURED BY VENTURE TAPE CORP.
- 23 22 10 GRILLES AND DIFFUSERS
- A. INSTALL DIFFUSERS, REGISTERS AND GRILLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE INTENDED FUNCTIONS. COORDINATE WITH OTHER WORK, INCLUDING DUCTWORK AND DUCT ACCESSORIES, AS NECESSARY TO INTERFACE INSTALLATION WITH OTHER WORK. LOCATE CEILING AIR DIFFUSERS, REGISTERS AND GRILLES AS INDICATED ON GENERAL CONSTRUCTION "REFLECTED CEILING PLANS." UNLESS OTHERWISE INDICATED, LOCATE UNITS IN CENTER OF ACoustICAL CEILING MODELS.
- B. ALL GRILLES, REGISTERS AND DIFFUSERS SHALL BE OF THE SIZES, TYPE, ETC., AS SHOWN ON THE PLAN AND SCHEDULES.
- C. ACCEPTABLE MANUFACTURERS: KRUEGER, PRICE OR TITUS.
- 23 23 30 MANUAL BALANCE DAMPERS
- D. FURNISH AND INSTALL ALL MANUAL BALANCING DAMPERS AS SHOWN ON THE DRAWINGS OR REQUIRED TO PROPERLY DISTRIBUTE THE AIR. BALANCING DAMPERS IN ROUND DUCTWORK SHALL BE OF SINGLE BLADE TYPE CONSTRUCTION, MINIMUM 18 GAUGE GALVANIZED STEEL OR DUCT GAUGE, WHICHEVER IS HEAVIER. PIVOT ROD SHAFT SHALL BE CONTINUOUS ON ALL SINGLE BLADE BALANCING DAMPERS. PROVIDE BALANCING DAMPERS IN RECTANGULAR DUCTWORK OF MULTI-BLADE (OPPOSED BLADE) TYPE CONSTRUCTION. ALL BALANCING DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SHACNA "HVAC DUCT CONSTRUCTION STANDARDS."
- E. ALL MANUAL BALANCING DAMPERS SHALL BE CONTROLLED BY VENTLOK 620/635 OR YOUNG 403 REGULATORS FOR UNINSULATED OR INTERNALLY LINED DUCTS OR BY VENTLOK 628/638 OR YOUNG 443 REGULATORS FOR EXTERNALLY WRAPPED DUCTS.
- F. ACCEPTABLE MANUFACTURERS FOR MULTIBLADE TYPE BALANCING DAMPERS: AIR GUIDE, ARROW UNITED, RELIABLE DAMPER, YOUNG REGULATOR, AIR BALANCE, OR GREENHECK.
- 23 23 10 LOUVERS
- A. PROVIDE LOUVERS WITH FRAME AND SILL STYLES THAT ARE COMPATIBLE WITH ADJACENT SUBSTRATE. LOUVERS SHALL BE SPECIFICALLY MANUFACTURED TO FIT INTO CONSTRUCTION OPENINGS IN THE ADJACENT SUBSTRATE WITH ACCURATE FIT AND ADEQUATE SUPPORT FOR A WEATHERPROOF INSTALLATION. CONSTRUCT LOUVERS OF EXTRUDED ALUMINUM ALLOY FRAME AND BLADES WITH ALL WELDED CONSTRUCTION. LOUVERS SHALL BE PROVIDED WITH A KYNAR FINISH. COLOR OF LOUVERS WILL BE SELECTED BY THE ARCHITECT. SUBMIT MANUFACTURERS STANDARD COLOR CHARTS FOR SELECTION. PROVIDE LOUVERS WITH ALUMINUM BIRD SCREENS.
- B. ACCEPTABLE MANUFACTURERS: RUSKIN, AMERICAN WARMING AND VENTILATING, OR GREENHECK.
- 23 30 10 EQUIPMENT IDENTIFICATION
- A. PROVIDE CLEAR STICKER ON CEILING T-BAR TO INDICATE ACCESS LOCATION FOR EACH FAN POWERED BOX AND VAV TERMINAL BOX.
- B. THE CONTRACTOR SHALL FURNISH AND INSTALL A SYSTEM OF NAMEPLATES OR STENCILS DESIGNED TO IDENTIFY EACH PIECE OF EQUIPMENT.
- (1) NAMEPLATE LETTERS AND NUMBERS SHALL MATCH EQUIPMENT DESIGNATION AS INDICATED ON THE DRAWINGS.
- (2) NAMEPLATES SHALL BE LAMINATED PHENOLIC WITH BLACK SURFACE AND WHITE CORE. USE 1/16" THICK MATERIAL FOR PLATES UP TO 2" BY 4"; FOR LARGER SIZES USE 1/8" THICK. LETTERS AND NUMBERS SHALL BE A MINIMUM OF 1/2" HIGH.
- (3) FASTEN NAMEPLATES TO ALL EQUIPMENT BY THE USE OF STAINLESS STEEL SHEET METAL SCREWS.
- 23 50 11 CENTRIFUGAL ROOF FANS
- A. PROVIDE DIRECT CENTRIFUGAL FANS, AS SCHEDULED, CONSISTING OF HOUSING, WHEEL, FAN SHAFT, BEARINGS, ECH, MOTOR AND DISCONNECT SWITCH, DRIVE ASSEMBLY, CURB BASE, AND ACCESSORIES.
- B. HOUSING: REMOVABLE, SPUN-ALUMINUM, DOME TOP, AND OUTLET BAFFLE SQUARE, ONE-PIECE, ALUMINUM BASE WITH VENTURI INLET CONE.
- C. FAN WHEELS: ALUMINUM HUB AND WHEEL WITH BACKWARD-INCLINED BLADES.
- D. ACCESSORIES:
- (1) DISCONNECT SWITCH: NONFUSIBLE TYPE, WITH THERMAL-OVERLOAD PROTECTION MOUNTED INSIDE FAN HOUSING, FACTORY WIRED THROUGH AN INTERNAL ALUMINUM CONDUIT.
- (2) BIRD SCREENS: REMOVABLE, 1/2-INCH MESH, ALUMINUM OR BRASS WIRE.
- (3) DAMPERS: COUNTERBALANCED, PARALLEL-BLADE, BACKDOAST DAMPERS MOUNTED IN CURB BASE; FACTORY SET TO CLOSE WHEN FAN STOPS.
- E. ROOF CURBS: SHALL BE FURNISHED BY THE FAN MANUFACTURER AND SHALL BE GALVANIZED STEEL, MITERED AND WELDED CORNERS, 1-1/2-INCH THICK, RIGID, FIBERGLASS INSULATION ADHERED TO INSIDE WALLS, AND 1-1/2-INCH WOOD MULLER. SIZE AS REQUIRED TO SUIT ROOF OPENING AND FAN BASE.
- (1) CONFIGURATION: SELF-FLASHING WITHOUT A CANT STRIP, WITH MOUNTING FLANGE
- (2) OVERALL HEIGHT: 14 INCHES
- (3) METAL LINER: GALVANIZED STEEL.
- F. ACCEPTABLE MANUFACTURERS: CARNES COMPANY HVAC, GREENHECK, LOREN COOK COMPANY, NEW YORK BLOWER COMPANY, PENN VENTILATION, TWIN CITY FAN COMPANY.
- 23 60 10 PACKAGED ROOFTOP AIR CONDITIONING UNITS
- G. GENERAL DESCRIPTION
- (1) PACKAGED ROOFTOP UNITS SHALL INCLUDE COMPRESSOR(S), EVAPORATOR COIL(S), FILTERS, SUPPLY FANS, DAMPERS, AIR-COOLED CONDENSER COILS, CONDENSER FANS, ELECTRIC PRE-HEATERS, EXHAUST FANS, AND ENERGY RECOVERY WHEELS.
- (2) UNITS SHALL BE FACTORY ASSEMBLED AND TESTED INCLUDING LEAK TESTING OF THE COILS, PRESSURE TESTING OF THE REFRIGERATION CIRCUIT, AND RUN TESTING OF THE COMPLETED UNIT. RUN TEST REPORT SHALL BE SUPPLIED WITH EACH UNIT IN THE CONTROLS COMPARTMENT'S LITERATURE POCKET.
- (3) UNITS SHALL HAVE DECALS AND TAGS TO INDICATE LIFTING AND RIGGING, SERVICE AREAS AND CAUTION AREAS FOR SAFETY AND TO ASSIST SERVICE PERSONNEL.
- (4) UNIT COMPONENTS SHALL BE LABELED, INCLUDING PIPE STUB OUTS, REFRIGERATION SYSTEM COMPONENTS AND ELECTRICAL AND CONTROLS COMPONENTS.
- (5) ESTIMATED SOUND POWER LEVELS (DBS) SHALL BE SHOWN ON THE UNIT RATINGS SHEET.
- (6) INSTALLATION, OPERATION AND MAINTENANCE MANUAL SHALL BE SUPPLIED WITH EACH UNIT.
- (7) LAMINATED COLOR-CODED WIRING DIAGRAM SHALL MATCH FACTORY INSTALLED WIRING AND SHALL BE AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT'S ACCESS DOOR.
- (8) UNIT NAMEPLATE SHALL BE PROVIDED IN TWO LOCATIONS ON THE UNIT, AFFIXED TO THE EXTERIOR OF THE UNIT AND AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT'S ACCESS DOOR.
- H. CONSTRUCTION
- (1) ALL CABINET WALLS, ACCESS DOORS, AND ROOF SHALL BE FABRICATED OF DOUBLE WALL, IMPACT RESISTANT, RIGID POLYURETHANE FOAM PANELS.
- (2) UNIT INSULATION SHALL HAVE A MINIMUM THERMAL RESISTANCE R-VALUE OF 13. FOAM INSULATION SHALL HAVE A MINIMUM DENSITY OF 2 POUNDS/CUBIC FOOT AND SHALL BE TESTED IN ACCORDANCE WITH ASTM D-1929 FOR A MINIMUM FLASH IGNITION TEMPERATURE OF 610°F.
- (3) UNIT CONSTRUCTION SHALL BE CAPABLE WALL WITH GROUND GALVANIZED STEEL ON BOTH SIDES AND A THERMAL BREAK. DOUBLE WALL CONSTRUCTION WITH A THERMAL BREAK PREVENTS MOISTURE ACCUMULATION ON THE INSULATION, PROVIDES A CLEANABLE INTERIOR, PREVENTS HEAT TRANSFER THROUGH THE PANEL, AND PREVENTS EXTERIOR CONDENSATION ON THE PANEL.
- (4) UNITS SHALL BE DESIGNED TO REDUCE AIR LEAKAGE AND INFILTRATION THROUGH THE CABINET. CABINET LEAKAGE SHALL NOT EXCEED 1% OF TOTAL AIRFLOW WHEN TESTED AT 3 TIMES THE MINIMUM EXTERNAL STATIC PRESSURE PROVIDED IN ASHRAE STANDARD 340/360. PANEL DEFLECTION SHALL NOT EXCEED 1/200 RATIO AT 125% OF DESIGN STATIC PRESSURE. AT A MAXIMUM 8 INCHES OF POSITIVE OR NEGATIVE STATIC PRESSURE, TO REDUCE AIR LEAKAGE, DEFLECTION SHALL BE MEASURED AT THE MIDPOINT OF THE PANEL HEIGHT AND WIDTH. CONTINUOUS SEALING SHALL BE INCLUDED BETWEEN PANELS AND BETWEEN ACCESS DOORS AND OPENINGS TO REDUCE AIR LEAKAGE. REFRIGERANT PIPING AND ELECTRICAL CONDUIT THROUGH CABINET PANELS SHALL INCLUDE SEALING TO REDUCE AIR LEAKAGE.
- (5) ROOF OF THE UNITS SHALL BE SLOPED TO PROVIDE COMPLETE DRAINAGE. CABINET SHALL HAVE RAIN BREAK OVERHANGS ABOVE ACCESS DOORS.
- (6) ACCESS TO FILTERS, DAMPERS, COOLING COILS, EXHAUST FANS, RETURN FANS, ENERGY RECOVERY WHEELS, COMPRESSORS, AND ELECTRICAL AND CONTROLS COMPONENTS SHALL BE THROUGH HINGED ACCESS DOORS WITH QUARTER TURN, ZINC CAST, LOCKABLE HANDLES. FULL LENGTH STAINLESS STEEL PIANO HINGES SHALL BE INCLUDED ON THE DOORS.
- (7) EXTERIOR PAINT FINISH SHALL BE CAPABLE OF WITHSTANDING AT LEAST 2,500 HOURS, WITH NO VISIBLE CORROSIVE EFFECTS, WHEN TESTED IN A SALT SPRAY AND FOG ATMOSPHERE IN ACCORDANCE WITH ASTM B-117-95 TEST PROCEDURE.
- (8) UNITS WITH COOLING COILS SHALL INCLUDE DOUBLE SLOPED 304 STAINLESS STEEL DRAIN PANS.
- (9) UNITS SHALL BE PROVIDED FOR DOWNFLOW ARRANGEMENT WITH BASE DISCHARGE AND RETURN AIR OPENINGS. ALL OPENINGS THROUGH THE BASE PAN OF THE UNIT SHALL HAVE TURNED FLANGES AT LEAST 1/2 INCH IN HEIGHT AROUND THE OPENING.
- (10) UNITS SHALL INCLUDE LIFTING LUGS TO AID IN RIGGING.
- I. ELECTRICAL
- (1) UNITS SHALL BE PROVIDED WITH STANDARD POWER BLOCK FOR CONNECTING POWER TO THE UNIT. A SINGLE POWER FEED SHALL BE PROVIDED FOR EACH UNITS SUPPLY FAN, RETURN/EXHAUST FAN, ENERGY RECOVERY WHEEL, CONTROLS AND REFRIGERATION COMPONENTS, INCLUDING COMPRESSORS AND CONDENSER FANS. UNITS SHALL BE PROVIDED WITH A FACTORY INSTALLED AND FACTORY WIRED, NON-FUSED DISCONNECT SWITCH FOR ALL OF THIS EQUIPMENT.
- (2) UNITS SHALL BE PROVIDED WITH A SEPARATE POWER FEED FOR THE ELECTRIC PRE-HEAT COILS.
- J. SUPPLY FANS
- (1) UNITS SHALL INCLUDE DIRECT DRIVE, UNHOUSED, BACKWARD CURVED, PLENUM-SUPPLY FANS.
- (2) BLOWERS AND MOTORS SHALL BE DYNAMICALLY BALANCED AND MOUNTED ON RUBBER ISOLATORS.
- (3) MOTORS SHALL BE PREMIUM EFFICIENCY ODP WITH BALL BEARINGS RATED FOR 200,000 HOURS SERVICE WITH EXTERNAL LUBRICATION POINTS.
- (4) UNITS SCHEDULED TO BE VARIABLE AIRFLOW SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES TO SERVE SUPPLY FANS. VARIABLE FREQUENCY DRIVES (VFD) SHALL BE FACTORY WIRED AND MOUNTED IN THE UNIT. FAN MOTORS SHALL BE PREMIUM EFFICIENCY, COMPATIBLE WITH THE VFD'S.
- K. POWERED EXHAUST FANS
- (1) POWERED EXHAUST FANS AND DAMPERS SHALL BE SIZED FOR 100% RELIEF.
- (2) FANS AND MOTORS SHALL BE DYNAMICALLY BALANCED.
- (3) MOTORS SHALL BE PREMIUM EFFICIENCY ODP WITH BALL BEARINGS RATED FOR 200,000 HOURS SERVICE WITH EXTERNAL LUBRICATION POINTS.
- (4) ACCESS TO EXHAUST FANS SHALL BE THROUGH DOUBLE WALL, HINGED ACCESS DOORS WITH QUARTER TURN HANDLES.
- (5) POWERED EXHAUST FANS SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES. VARIABLE FREQUENCY DRIVES SHALL BE FACTORY WIRED AND MOUNTED IN THE UNIT. FAN MOTORS SHALL BE PREMIUM EFFICIENCY.
- L. COOLING COILS
- (1) EVAPORATOR COILS
- (A) COILS SHALL BE DESIGNED FOR USE WITH R-410A REFRIGERANT AND CONSTRUCTED OF COPPER TUBES WITH ALUMINUM FINS MECHANICALLY BONDED TO THE TUBES AND GALVANIZED STEEL END CASINGS. FIN DESIGN SHALL BE SINE WAVE RIPPLED. FIN SPACING SHALL NOT EXCEED 1.0 FINS PER INCH.
- (B) COILS FOR UNITS WITH TWO REFRIGERANT CIRCUITS SHALL HAVE INTERLACED CIRCUITRY.
- (C) COILS SHALL BE HELIUM LEAK TESTED.
- (D) COILS SHALL BE FURNISHED WITH FACTORY INSTALLED THERMOSTATIC EXPANSION VALVES.
- M. REFRIGERATION SYSTEM
- (1) UNITS SHALL BE FACTORY CHARGED WITH SCHEDULED REFRIGERANT.
- (2) COMPRESSORS SHALL BE SCROLL TYPE WITH THERMAL OVERLOAD PROTECTION, INDEPENDENTLY CIRCUITED, AND CARRY A 5 YEAR NON-PRORATED WARRANTY.
- (3) COMPRESSORS SHALL BE MOUNTED IN AN ISOLATED SERVICE COMPARTMENT WHICH CAN BE ACCESS WITHOUT AFFECTING UNIT OPERATION. LOCALABLE HINGED COMPRESSOR ACCESS DOORS SHALL BE FABRICATED OF DOUBLE WALL, RIGID POLYURETHANE FOAM INSULATED PANELS TO PREVENT THE TRANSMISSION OF NOISE OUTSIDE THE CABINET.
- (4) COMPRESSORS SHALL BE ISOLATED FROM THE BASE PAN WITH THE COMPRESSOR MANUFACTURER'S RECOMMENDED RUBBER VIBRATION ISOLATORS, TO REDUCE ANY TRANSMISSION OF NOISE FROM THE COMPRESSORS INTO THE BUILDING AREA.
- (5) EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH THERMOSTATIC EXPANSION VALVE TYPE REFRIGERANT FLOW CONTROL.
- (6) EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH AUTOMATIC RESET LOW PRESSURE AND MANUAL RESET HIGH PRESSURE REFRIGERANT SAFETY CONTROLS. SCHRADER TYPE SERVICE FITTINGS ON BOTH THE HIGH PRESSURE AND LOW PRESSURE SIDES, AND FACTORY INSTALLED LIQUID LINE FILTER DRIERS. EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH A LIQUID LINE SIGHT GLASS.
- (A) EACH REFRIGERATION CIRCUIT SHALL BE PROVIDED WITH AN ADJUSTABLE TEMPERATURE SENSOR FREEZE STAT WHICH SHUTS DOWN THE COOLING CIRCUITS WHEN THE EVAPORATOR COIL TUBING FALLS BELOW THE SETPOINT.
- (B) EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH SUCTION AND DISCHARGE COMPRESSOR ISOLATION VALVES.
- (C) EACH CAPACITY STAGE SHALL BE EQUIPPED WITH A 5 MINUTE OFF, DELAY TIMER TO PREVENT COMPRESSOR SHORT CYCLING.
- (D) EACH CAPACITY STAGE SHALL BE EQUIPPED WITH AN ADJUSTABLE, 20 SECOND DELAY TIMER TO PREVENT MULTIPLE CAPACITY STAGES FROM STARTING AT AT ONCE.
- (E) UNITS SHALL INCLUDE A VARIABLE CAPACITY SCROLL COMPRESSOR(S) ON THE LEAD REFRIGERATION CIRCUIT(S) WHICH SHALL BE CAPABLE OF MODULATION FROM 10-100% OF ITS CAPACITY.
- N. CONDENSERS
- (1) AIR-COOLED CONDENSER FANS SHALL BE VERTICAL DISCHARGE, AXIAL FLOW, AND DIRECT DRIVE FANS.
- (2) COILS SHALL BE DESIGNED FOR USE WITH R-410A REFRIGERANT AND CONSTRUCTED OF COPPER TUBES WITH ALUMINUM FINS MECHANICALLY BONDED TO THE TUBES AND ALUMINUM END CASINGS. FIN DESIGN SHALL BE SINE WAVE RIPPED.
- (3) COILS SHALL BE DESIGNED FOR A MINIMUM OF 10F OF REFRIGERANT SUB-COOLING.
- (4) COILS SHALL BE HELIUM LEAK TESTED.
- (5) CONDENSER FANS SHALL HAVE HIGH EFFICIENCY, ELECTRICALLY COMMUTATED MOTORS DRIVEN BY VARIABLE FREQUENCY DRIVES WHICH ARE CONTROLLED BASED ON HEAD PRESSURE AND ALLOW MATCHING CONDENSER AIRFLOW WITH COOLING CAPACITY REQUIREMENTS.
- O. FILTERS
- (1) UNITS SHALL INCLUDE 2 INCH THICK, PLEATED PANEL FILTERS WITH AN ASHRAE EFFICIENCY OF 30% AND HEAVY RATING OF 7. UPSTREAM OF THE ENERGY RECOVERY WHEEL, IN THE RETURN AIRSTREAM AND UPSTREAM OF ELECTRIC HEATING COILS AS INDICATED.
- P. OUTSIDE AIR/ECONOMIZER
- (1) UNITS SHALL INCLUDE 6-100% ECONOMIZER CONSISTING OF A MOTOR OPERATED OUTSIDE AIR DAMPER AND RETURN AIR DAMPER ASSEMBLY CONSTRUCTED OF EXTRUDED ALUMINUM. HOLLOW CORE, AIRFOIL BLADES WITH RUBBER EDGE SEALS AND ALUMINUM END SEALS. DAMPER BLADES SHALL BE GEAR DRIVEN AND DESIGNED TO HAVE NO MORE THAN 15 CM OF LEAKAGE PER 50. FT. OF DAMPER AREA WHEN SUBJECTED TO 2 INCHES W.G. AIR PRESSURE DIFFERENTIAL ACROSS THE DAMPER. DAMPER ASSEMBLY SHALL BE CONTROLLED BY SPRING RETURN SENSIBLE TEMPERATURE ACTIVATED FULLY MODULATING ACTUATOR. UNIT SHALL INCLUDE OUTSIDE AIR OPENING BIRD SCREEN, OUTSIDE AIR HOOD WITH RAIN LIP AND BAROMETRIC RELIEF DAMPERS OR POWERED EXHAUST FAN.
- (2) WHERE INDICATED IN THE CONTROL SEQUENCES, THE ECONOMIZER SHALL BE FURNISHED WITH RETURN AIR CO₂ OVERRIDE.
- Q. CONTROLS
- (1) EACH ROOFTOP AIR CONDITIONING UNIT SHALL BE PROVIDED WITH FACTORY INSTALLED AND TESTED CONTROLS. EACH UNIT'S CONTROLLER SHALL BE MICROPROCESSOR BASED AND SHALL BE CAPABLE OF CONTROLLING ALL FEATURES AND OPTIONS OF THE UNITS AS SHOWN ON THE DRAWINGS AND INDICATED IN THE SEQUENCES OF OPERATION. CONTROLLERS SHALL BE INTERFERED WITH THE BUILDING AUTOMATION SYSTEM AS INDICATED BUT SHALL BE ALSO CAPABLE OF STAND ALONE OPERATION WITH UNIT CONFIGURATION, SETPOINT ADJUSTMENT, SENSOR STATUS VIEWING, UNIT ALARM VIEWING, AND OCCUPANCY SCHEDULING. CONTROLLERS SHALL BE INTERFERED WITH THE BUILDING MANAGEMENT SYSTEM. CONTROLLERS SHALL HAVE AN ONBOARD CLOCK AND CALENDAR FUNCTIONS THAT ALLOW FOR OCCUPANCY SCHEDULING. CONTROLLERS SHALL INCLUDE NON-VOLATILE MEMORY TO RETAIN ALL PROGRAMMED VALUES, WITHOUT THE USE OF AN EXTERNAL BATTERY, IN THE EVENT OF A POWER FAILURE.
- (2) VARIABLE AIR VOLUME CONTROLS
- (A) UNITS SHALL BE EQUIPPED WITH DIGITAL SCROLL COMPRESSOR(S) ON THE LEAD REFRIGERATION CIRCUITS TO PROTECT AGAINST EVAPORATOR FROSTING AT LOW SUCTION PRESSURES AND TO PREVENT EXCESSIVE COMPRESSOR CYCLING.
- (B) OUTSIDE AND RETURN AIR TEMPERATURE SENSORS SHALL BE FACTORY MOUNTED AND WIRED (OUTSIDE ARE TEMPERATURE SENSORS MUST BE FIELD INSTALLED ON UNITS WITH ELECTRIC PREHEAT COILS). SUPPLY AIR TEMPERATURE SENSORS AND SUPPLY AIR DUCT STATIC PRESSURE SENSOR SHALL BE FURNISHED WITH THE UNIT FOR FIELD INSTALLATION.
- (C) CONTROL OF SUPPLY AIR FLOW WITH DUCT STATIC PRESSURE CONTROL, SHALL BE VIA THE UNIT CONTROLLER. THE FACTORY INSTALLED VARIABLE FREQUENCY DRIVE, AND REMOTE SUPPLY AIR DUCT STATIC PRESSURE SENSOR.
- (3) CONSTANT VOLUME CONTROLS
- (A) OUTSIDE AIR TEMPERATURE SENSOR SHALL BE FACTORY MOUNTED AND WIRED. SUPPLY AIR TEMPERATURE SENSOR AND SPACE TEMPERATURE SENSOR WITH TEMPERATURE SETPOINT RESET AND UNOCCUPIED OVERRIDE SHALL BE FURNISHED WITH THE UNIT FOR FIELD INSTALLATION.
- R. CURBS
- (1) CURBS SHALL TO BE FULLY GASKETED BETWEEN THE CURB TOP AND UNIT BOTTOM WITH THE CURB PROVIDING FULL PERIMETER SUPPORT, CROSS STRUCTURE SUPPORT AND AIR SEAL FOR THE UNIT. CURB GASKETS SHALL BE LAMISHED WITHIN THE CONTROL COMPARTMENT OF THE ROOFTOP UNIT TO BE MOUNTED ON THE CURB IMMEDIATELY BEFORE MOUNTING OF THE ROOFTOP UNIT.
- (2) CURB SHALL HAVE MINIMUM 1" DEFLECTION SPRING ISOLATION.
- S. ACCEPTABLE MANUFACTURERS: AARON, MAMMOTH, SEASONS 4, TEMPROL, TRANE, DAIKIN
- 23 61 10 DUCTLESS, SPLIT SYSTEM AIR CONDITIONERS
- A. THE DUCTLESS, SPLIT SYSTEM AIR CONDITIONERS CONTROL SYSTEM SHALL BE DESIGNED TO MAINTAIN TEMPERATURE CONDITIONS WITHIN THE ROOM. THE DUCTLESS, SPLIT SYSTEM AIR CONDITIONERS SYSTEM SHALL BE SPLIT REFRIGERATION SYSTEM WITH THE COMPRESSOR LOCATED IN A REMOTE CONDENSING UNIT.
- B. THE EVAPORATOR SECTIONS SHALL BE SPECIFICALLY DESIGNED FOR WALL-MOUNTED INSTALLATION. CONDENSING UNITS SHALL BE DESIGNED FOR OUTDOOR INSTALLATION.
- C. THE INDOOR, WALL-MOUNTED UNIT SHALL BE FACTORY ASSEMBLED, WIRE AND TESTED. THE UNIT CABINET SHALL BE FORMED FROM HIGH STRENGTH MOLDED PLASTIC WITH SMOOTH FINISH, FLAT FRONT PANEL DESIGN WITH ACCESS FOR FILTER. THE UNIT SHALL CONTAIN ALL FACTORY WIRING AND INTERNAL PIPING, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT, IN CONJUNCTION WITH THE WIRED, WALL MOUNTED CONTROLLER SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AN AUTO RESTART FUNCTION, AND A TEST RUN SWITCH.
- D. THE INDOOR UNIT FAN SHALL BE DOUBLE INLET, FORWARD CURVE, AND DIRECT DRIVE WITH A SINGLE MOTOR. THE FANS SHALL BE STATICALLY AND DYNAMICALLY BALANCED AND RUN ON A MOTOR WITH PERMANENTLY LUBRICATED BEARINGS. THE INDOOR FAN SHALL CONSIST OF THREE (3) SPEEDS: LOW, MID, HI, AND AUTO. THE FAN SHALL HAVE A SELECTABLE AUTO FAN SETTING THAT WILL ADJUST THE FAN SPEED ON THE DIFFERENCE BETWEEN CONTROLLER SET-POINT AND SPACE TEMPERATURE.
- E. FILTER: RETURN AIR SHALL BE FILTERED BY MEANS OF AN EASILY REMOVABLE WASHABLE FILTER.
- F. THE EVAPORATOR COIL SHALL BE NONFERROUS CONSTRUCTION WITH PRE-COATED ALUMINUM FINS ON COPPER TUBING. A CONDENSATE PAN AND DRAIN SHALL BE PROVIDED UNDER THE COIL.
- G. THE ELECTRIC POWER OF THE UNIT SHALL BE 208 VOLTS OR 230 VOLTS, 1 PHASE, 60 HERTZ AS SCHEDULED. THE POWER TO THE INDOOR UNIT SHALL BE SUPPLIED FROM THE OUTDOOR UNIT.
- H. THE INDOOR UNIT SHALL BE CONNECTED TO A WALL MOUNTED AND WIRED CONTROLLER TO PERFORM INPUT FUNCTIONS NECESSARY TO OPERATE THE SYSTEM. THE WIRED CONTROLLER SHALL HAVE A LARGE MULTI-LANGUAGE DOT LIQUID CRYSTAL DISPLAY AND CONSIST OF AN ON/OFF BUTTON, TEMPERATURE SET, TEMPERATURE UP/DOWN, A HEAT/COO/AUTO MODE SELECTOR, A TIMER MENU BUTTON, A TIMER ON/OFF BUTTON, SET TIME BUTTONS, A FAN SPEED SELECTOR, A VENTILATION BUTTON, A TEST RUN BUTTON, AND A CHECK MODE BUTTON. THE CONTROLLER SHALL HAVE A BUILT-IN TEMPERATURE SENSOR. TEMPERATURE SHALL BE DISPLAYED IN DEGREES FAHRENHEIT.
- I. OUTDOOR AIR-COOLED CONDENSING UNITS SHALL BE FACTORY-ASSEMBLED AND TESTED, AIR-COOLED, HORIZONTAL DISCHARGE TYPE, CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTOR, REFRIGERANT RESERVOIR AND OPERATING CONTROLS. CASING SHALL BE ZINC COATED STEEL FINISHED WITH BAKED ENAMEL, COMPLETE WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS AND MOUNTING HOLES IN BASE. COMPRESSOR SHALL BE HERMETICALLY SEALED, WITH BUILT-IN OVERLOADS AND VIBRATION ISOLATION.
- J. THE CONDENSING UNIT COMPRESSOR SHALL BE A DC TWIN-ROTOR ROTARY COMPRESSOR WITH VARIABLE SPEED INVERTER DRIVE TECHNOLOGY. THE COMPRESSOR SHALL BE DRIVEN BY THE INVERTER CIRCUIT TO CONTROL COMPRESSOR SPEED. THE COMPRESSOR SPEED SHALL DYNAMICALLY VARY TO MATCH THE ROOM LOAD FOR SIGNIFICANTLY INCREASING THE EFFICIENCY OF THE SYSTEM WHICH RESULT IN SIGNIFICANT ENERGY SAVINGS. TO PREVENT LIQUID FROM ACCUMULATING IN THE COMPRESSOR DURING THE OFF CYCLE, A MINIMAL AMOUNT OF CURRENT SHALL BE AUTOMATICALLY, INTERMITTENTLY APPLIED TO THE COMPRESSOR MOTOR WINDINGS TO MAINTAIN SUFFICIENT HEAT TO VAPORIZE ANY REFRIGERANT. NO CRANKCASE HEATER IS TO BE USED. THE OUTDOOR CONDENSING UNIT SHALL HAVE AN ACCUMULATOR AND HIGH PRESSURE SAFETY SWITCH. THE COMPRESSOR SHALL BE MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION.
- K. THE L-SHAPED CONDENSER COIL SHALL BE OF COPPER TUBING WITH FLAT ALUMINUM FINS. THE COIL SHALL BE PROTECTED WITH AN INTEGRAL METAL GUARD. REFRIGERANT FLOW FROM THE CONDENSER SHALL BE CONTROLLED BY MEANS OF AN ELECTRONIC LINEAR EXPANSION VALVE (LEV) REMOTE DEVICE. THE LEV SHALL BE CONTROLLED BY A MICROPROCESSOR CONTROLLED STEP MOTOR.
- L. AN ALUMINUM CONDENSING UNIT PROPELLER FAN SHALL BE DIRECT-DRIVEN WITH PERMANENTLY LUBRICATED OR BALL BEARING FAN MOTOR HAVING THERMAL OVERLOAD PROTECTION. FURNISH UNIT WITH WIND BAFFLE ACCESSORY FOR LOW AMBIENT COOLING DOWN TO 0°F OUTDOOR AIR TEMPERATURE. REFRIGERANT CHARGE: R-410A.
- M. THE OUTDOOR UNIT SHALL BE COMPATIBLE WITH THE INDOOR UNIT AND SHALL BE OF THE SAME CAPACITY AND SAME MANUFACTURER AS THE INDOOR UNIT. THE OUTDOOR UNIT SHALL BE EQUIPPED WITH A CONTROL BOARD THAT INTERFACES WITH THE INDOOR UNIT TO PERFORM ALL NECESSARY OPERATIONS FUNCTIONS.
- N. THE CONTROL SYSTEM SHALL CONSIST OF TWO MICROPROCESSORS, ONE ON EACH INDOOR AND OUTDOOR UNIT, INTERCONNECTED BY A SINGLE, NON-POWERS TWO-CABLE. THE SYSTEM SHALL HAVE SELF-DIAGNOSTICS ABILITY AND SHALL BE CAPABLE OF AUTOMATIC RESTART WHEN POWER IS RESTORED AFTER POWER INTERRUPTION. THE INDOOR UNIT SHALL BE CONNECTED TO A WALL-MOUNTED WIRED CONTROLLER VIA 12VDC MONITORING SET TEMPERATURE, ROOM TEMPERATURE, AND COMPRESSOR OPERATION CONDITIONS. THE CONTROL SIGNAL BETWEEN THE INDOOR AND OUTDOOR UNITS SHALL BE 24VDC.
- O. ACCEPTABLE MANUFACTURERS: ENVIRONMENTAL INTL. (EMI), FRIEDRICH, MITSUBISHI, SANKO, CARRIER.
- 23 93 30 CONTROL DAMPERS
- A. CONTROL DAMPERS SHALL BE LOW LEAKAGE PARALLEL BLADE TYPE. CONSTRUCT BLADES OF 16 GAUGE GALVANIZED STEEL OR AIR-FIL SHAPED EXTRUDED 12-GAUGE (0.0181") ALUMINUM. PROVIDE HEAVY-DUTY MOLDED SELF-LUBRICATING OLITE OR SYNTHETIC BEARINGS WITH 1/2" DIAMETER STEEL AXLES SPACED ON MAXIMUM 6" CENTERS. CONSTRUCT FRAME OF MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL OR 0.125" THICK 6063-T5 EXTRUDED ALUMINUM HAT-SHAPED FRAME WITH STAINLESS STEEL FASTENERS. DAMPERS SHALL HAVE LEAKAGE OF LESS THAN 1% IN OR 2% SCFM/50. FT. WHEN CLOSING AGAINST 4" WATER COLUMN STATIC PRESSURE AND WHEN SIZED FOR 2000 FPM VELOCITY. CONTROL DAMPERS SHALL HAVE PLASTIC EDGE SEALS WITH A TEMPERATURE RANGE TO 150 °F AND STAINLESS STEEL COMPRESSION TYPE JAMB SEALS.
- B. ACCEPTABLE MANUFACTURERS: AIR BALANCE, AMERICAN WARMING & VENTILATING, ARROW, GREENHECK, HONEYWELL, JOHNSON CONTROLS OR RUSKIN.

TENANT IMPROVEMENTS FOR:

SONNY'S

2201 NE TOWN CENTRE BOULEVARD
LEES SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 08/15/2025

PROJECT: 016-0402

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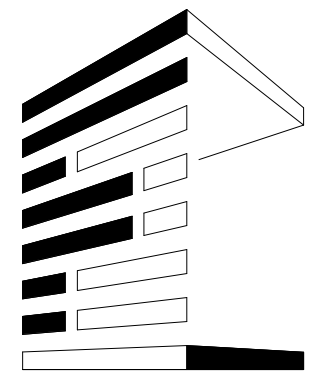
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The Foundation Architects, LLC and their Consultants

DRAWING TITLE:
MECHANICAL
SPECIFICATIONS

SHEET #:

M5.02



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PROJECT:

EQUIPMENT/DEVICES		
EQUIPMENT/DEVICES SYMBOL LEGEND		
SYMBOL	DESCRIPTION	
	AREAWAY DRAIN	22 41 10
	CONTROL VALVE (TWO-POSITION)	
	DOUBLE CHECK BACKFLOW PREVENTER	22 14 20
	EMERGENCY (OVERFLOW) ROOF DRAIN	22 41 10
	FAUCET OR HOSE BIBB	22 42 10
	MIXING VALVE	22 13 11
	PRESSURE GAUGE WITH SHUT-OFF VALVE	22 12 30
	REDUCED PRESSURE BACKFLOW PREVENTER WITH FUNNEL AND DRAIN	22 14 10
	ROOF DRAIN	22 41 20
	SAINTARY FLOOR DRAIN	22 41 10
	THERMOMETER	22 12 30
	TRAP PRIMER VALVE	22 41 10
	WATER HAMMER ARRESTOR	22 12 50
	WATER UTILITY METER	22 19 20
	WATER SUB-METER	22 19 10
NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.		

ABBREVIATIONS		
PLUMBING ABBREVIATION SCHEDULE1		
ABBREVIATION	DESCRIPTION	
AD	AREA DRAIN	
AFF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	
AP	ACCESS PANEL	
APPROX	APPROXIMATELY	
ARCH	ARCHITECT, ARCHITECTURAL	
BFG	BELOW FINISHED GRADE	
BHP	BRAKE HORSEPOWER	
BOP	BOTTOM OF PIPE	
BT	BATHTUB	
BTUH	BRITISH THERMAL UNIT PER HOUR	
CFH	CUBIC FEET PER HOUR	
CI	CAST IRON	
CS	CLINIC SINK	
D	DEEP	
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	
DCVA	DOUBLE CHECK VALVE ASSEMBLY	
DEG F	DEGREES FARENHEIT	
DEMO	DEMOLITION	
DF	DRINKING FOUNTAIN	
DIA	DIAMETER	
DN	DOWN	
DS	DOWNSPOUT	
DTF	DOWN THROUGH FLOOR	
DTR	DOWN THROUGH ROOF	
DWG	DRAWING	
DWH	DOMESTIC WATER HEATER	
DWS	DOMESTIC WATER SOFTENER	
E	EAST	
EA	EACH	
EC	ELECTRICAL CONTRACTOR	
ET	EXPANSION TANK	
ETR	EXISTING TO REMAIN	
EW	ELECTRIC WATER COOLER	
EWT	ENTERING WATER TEMPERATURE (DEG F)	
FD	FLOOR DRAIN	
FFE	FINISHED FLOOR ELEVATION	
FP	FIRE PROTECTION	
FPC	FIRE PROTECTION CONTRACTOR	
FT	FEET	
GAL	GALLON	
GC	GENERAL CONTRACTOR	
GPD	GALLONS PER DAY	
GPH	GALLONS PER HOUR	
GPM	GALLONS PER MINUTE	
GPR	GAS PRESSURE REGULATOR	
GV	GAS VENT	
H	HIGH	
HB	HOSE BIBB	
HEAD	FEET OF WATER COLUMN PRESSURE	
HOA	HAND-OFF-AUTOMATIC	
HP	HORSEPOWER	
HZ	HERTZ (CYCLES PER SECOND)	
IN	INCH	
INV	INVERT ELEVATION	
KW	KILOWATT	
L	LENGTH	
LAV	LAVATORY	
LT	LAUNDRY TUB	
NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN THIS SET.		

ABBREVIATIONS		
PLUMBING ABBREVIATION SCHEDULE1		
ABBREVIATION	DESCRIPTION	
LWT	LEAVING WATER TEMPERATURE (DEG F)	
MAX	MAXIMUM	
MB	MOP BASIN	
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR	
MC	MECHANICAL CONTRACTOR	
MFR	MANUFACTURER	
MHP	MOTOR HORSEPOWER	
MIN	MINIMUM	
MV	MIXING VALVE	
MVP	MEDICAL VACUUM PUMP	
N	NORTH	
NA, N/A	NOT APPLICABLE	
NEC	NATIONAL ELECTRIC CODE	
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	
NO	NORMALLY OPEN	
NO	NUMBER	
NPT	NOMINAL PIPE THREAD	
NTS	NOT TO SCALE	
P	PUMP	
PC	PLUMBING CONTRACTOR	
PD	PRESSURE DROP	
PH	PHASE	
PSI	POUNDS PER SQUARE INCH	
PSIA	POUNDS PER SQUARE INCH ABSOLUTE	
PSIG	POUNDS PER SQUARE INCH GAUGE	
PVC	POLYVINYL CHLORIDE	
QTY	QUANTITY	
RD	ROOF DRAIN	
RPBP	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER	
RPM	REVOLUTIONS PER MINUTE	
S	SOUTH	
S	SINK	
SF	SQUARE FEET	
SH	SHOWER	
SPECS	SPECIFICATIONS	
SQ	SQUARE	
SS	STAINLESS STEEL	
T&P	TEMPERATURE AND PRESSURE	
TCC	(TEMPERATURE) CONTROL CONTRACTOR	
TEMP	TEMPERATURE (DEG F)	
TOP	TOP OF PIPE	
TP	TRAP PRIMER VALVE	
TYP	TYPICAL	
U	URINAL	
UL	UNDERWRITERS LABORATORIES	
UNO	UNLESS NOTED OTHERWISE	
UT	UP THROUGH FLOOR	
UTR	UP THROUGH ROOF	
V	VOLTS	
VB	VACUUM BREAKER	
VCT	VITREOUS CLAY TILE	
VP	VACUUM PUMP	
VTR	VENT THROUGH ROOF	
W	WATTS	
W	WEST	
W	WIDE	
WB	WALL BOX	
WC	WATER CLOSET	
WHA	WATER HAMMER ARRESTOR	
ZV	ZONE VALVE BOX	

LEGEND - PIPE LINETYPE SCHEDULE

ABBREVIATION	DESCRIPTION
CW	DOMESTIC COLD WATER
HW	110° DOMESTIC HOT WATER
SAN	SANITARY SEWER
SANB	SANITARY SEWER (BELOW FLOOR OR GRADE)
V	SANITARY VENT

NOTE: ALL LINETYPES MAY NOT BE USED IN THIS SET.

REFERENCE SYMBOL LEGEND

		DETAIL CALLOUT
		SECTION AND ELEVATION CALLOUT
		ENLARGED PLAN CALLOUT
		CONTINUATION CALLOUT

SANITARY SEWER MINIMUM PIPE SLOPES

PIPE SIZE	SLOPE (PER FOOT)
2-1/2" OR LESS	1/4" (2%)
3" TO 6"	1/8" (1%)

DRAWING LIST - PLUMBING

SHEET NUMBER	SHEET NAME
P0.01	GENERAL INFORMATION
P1.01	FIRST FLOOR PLUMBING DEMOLITION PLAN
P2.01	FIRST FLOOR PLUMBING PLAN
P3.01	FIRST FLOOR ENLARGED PLUMBING PLANS
P4.01	PLUMBING SCHEDULES AND DETAILS
P5.01	PLUMBING SPECIFICATIONS

PIPING

PIPING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	PIPE DOWN THROUGH FLOOR/ROOF
	EXISTING TO REMAIN PIPE DOWN THROUGH FLOOR/ROOF
	REMOVE PIPE DOWN THROUGH FLOOR/ROOF
	PIPE UP THROUGH FLOOR/ROOF
	EXISTING TO REMAIN PIPE UP THROUGH FLOOR/ROOF
	REMOVE PIPE UP THROUGH FLOOR/ROOF

NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.

PIPE FITTINGS SYMBOL LEGEND

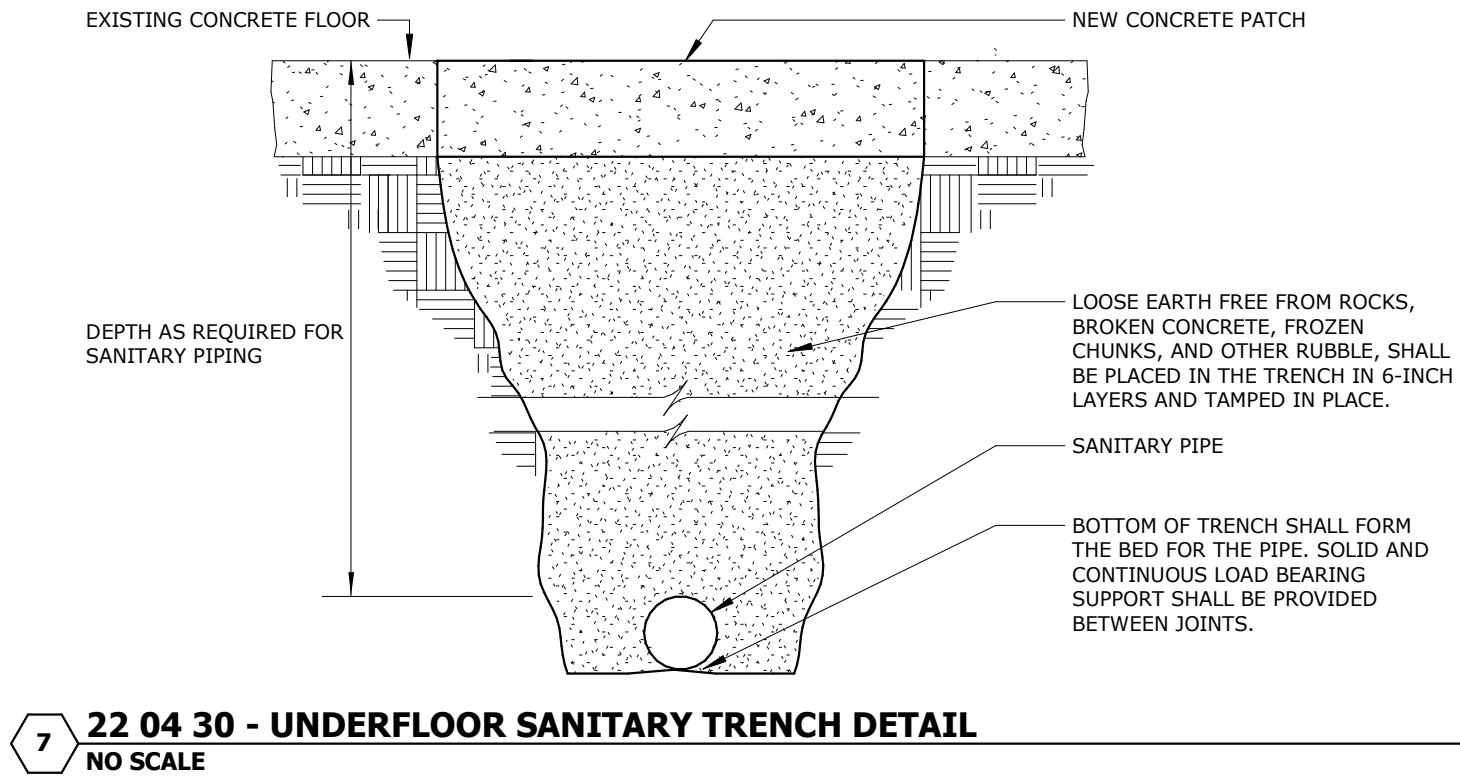
SYMBOL	DESCRIPTION
	CAP
	CLEANOUT
	CLEANOUT (FLUSH WITH FLOOR)
	EXPANSION JOINT
	ORIFICE FLOW METER FITTING
	MANUAL AIR VENT
	MANUAL DRAIN VALVE WITH HOSE CONNECTION
	PIPE ANCHOR
	PIPE GUIDE
	REDUCER
	TIE-IN POINT
	90° PIPE RISE OR DROP
	90° PIPE CONNECTION OUT OF BOTTOM
	90° PIPE CONNECTION OUT OF TOP
	90° PIPE CONNECTION OUT OF SIDE
	PIPING RISER DOWN
	PIPING RISER UP

NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.

PLUMBING PIPE ACCESSORIES LEGEND

SYMBOL	DESCRIPTION
	AUTO BALANCE VALVE
	MANUAL BALANCE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	FLEXIBLE CONNECTION - WOVEN METAL
	GAS COCK
	GATE VALVE
	STRAINER
	STRAINER WITH BLOWDOWN VALVE
	PLUG VALVE
	PRESSURE REDUCING VALVE (PRV)

NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.



RELEASED FOR
REVIEW ONLY
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
08/18/2025

SEAL

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Phone: 330-666-3702
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PROJECT:

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 08/15/2025

PROJECT #: 016-0402
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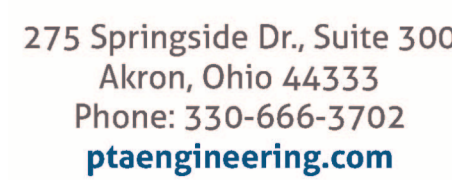
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DRAWING TITLE:
GENERAL INFORMATION

SHEET #:
P0.01



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ARCHITECTURE, LLC
740 MARKS ROAD - SUITE A, VALLEY CITY, OHIO



TENANT IMPROVEMENTS FOR:

SONNY'S

2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

P1.01

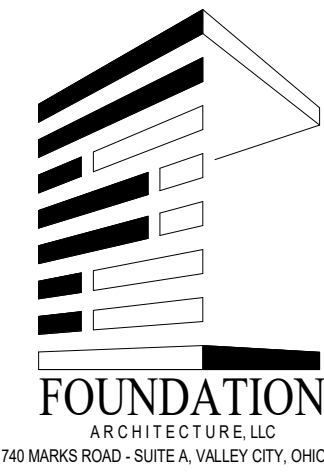
1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL SALVAGED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL PIPING, AS INDICATED BY THE DEMOLITION LINE/PYRE REMOVAL OF ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS PIPE HANGERS, SUPPORTS, INSULATION, VALVES, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE PIPING BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE PIPING BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED PIPES SAME AS NEW. DEAD LEGS SHALL NOT BE PERMITTED.

N 

SCALE: 1/8" = 1'-0"



SEAL



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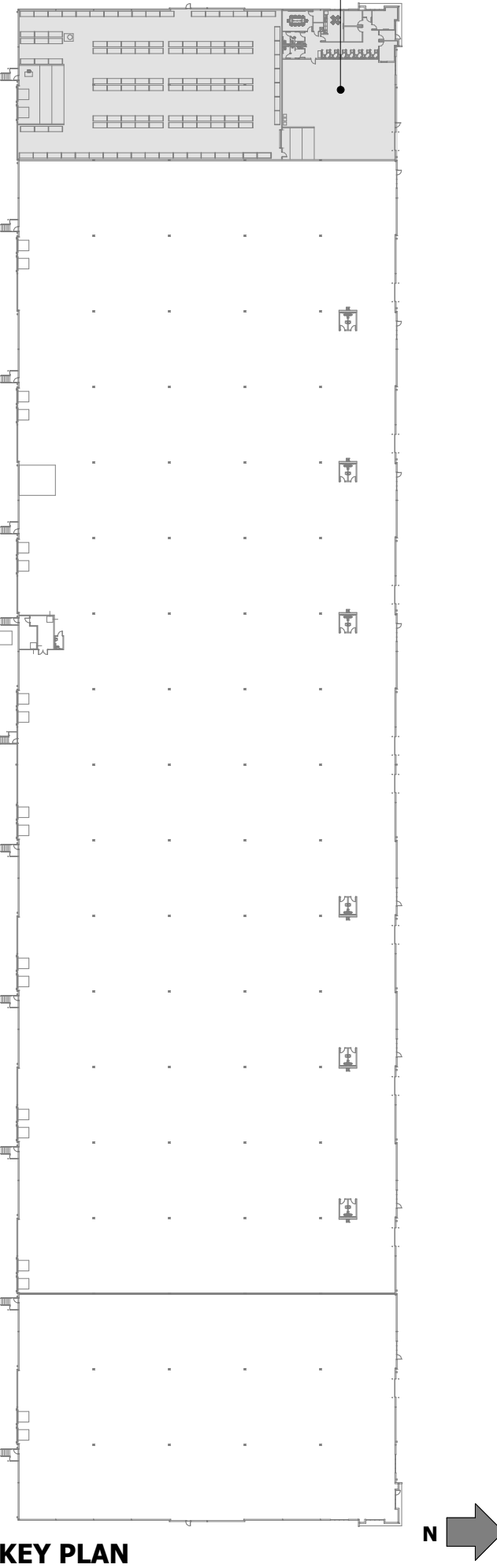
DRAWING TITLE:
FIRST FLOOR PLUMBING
PLAN

SHEET #:
P2.01

DRAWING INTERPRETATION NOTES:

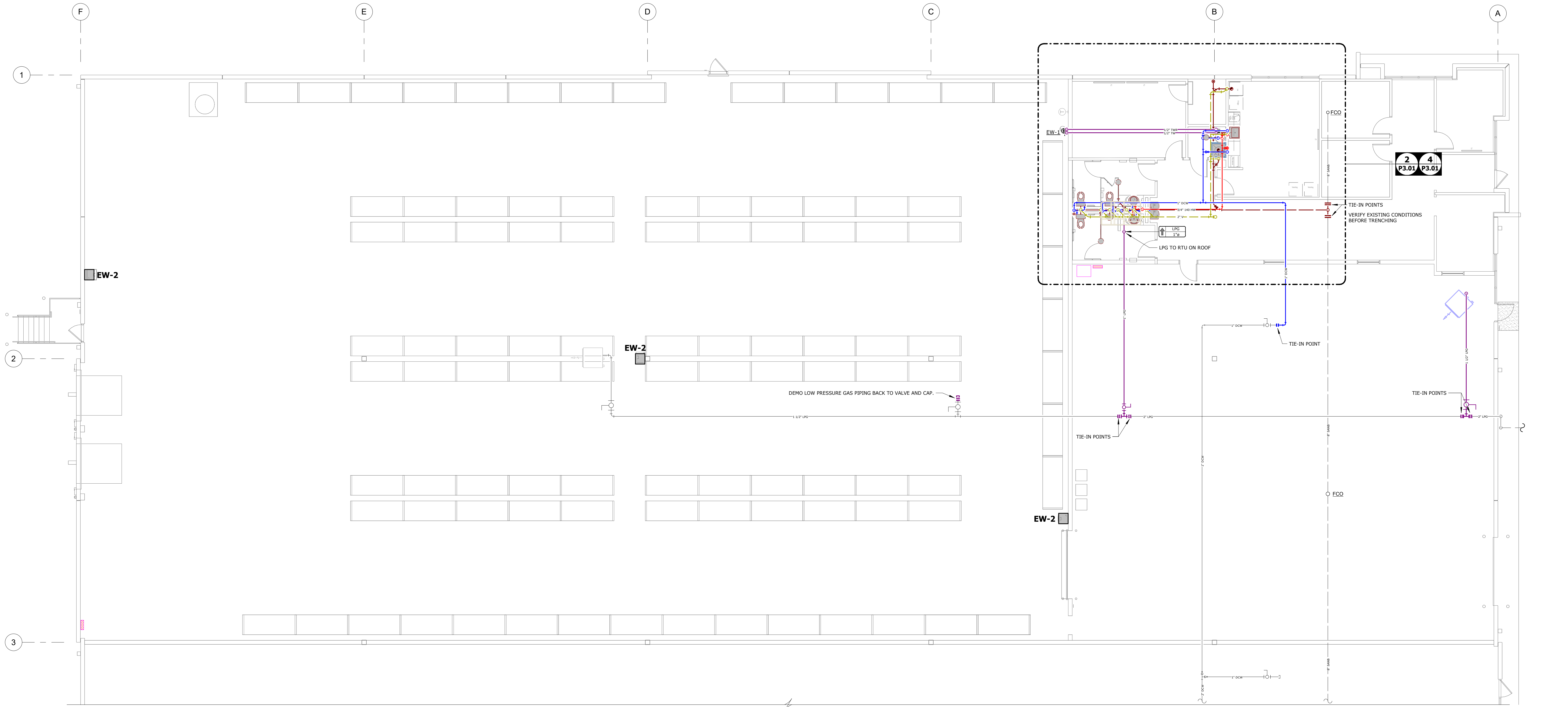
- EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
- NEW LINETYPE: THICK (DARK) SOLID LINES REPRESENT ITEMS THAT ARE NEW OR RELOCATED.
- RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATION(S). NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBSCURED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
- EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).

SHADING INDICATES WORK AREA



PLUMBING PIPING NEW WORK NOTES:

- SHUT-OFF VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. COORDINATE THE LOCATION OF ACCESS DOORS IN CEILINGS OR WALLS WITH THE GENERAL CONTRACTOR IF A VALVE IS REQUIRED TO BE LOCATED ABOVE AN INACCESSIBLE CEILING OR IN A WALL OR CHASE.
- DO NOT INSTALL ANY PIPING BENEATH OR ADJACENT TO ANY EQUIPMENT THAT WOULD HINDER MAINTENANCE ACCESS TO EQUIPMENT OR THE FUTURE REMOVAL OF EQUIPMENT.
- WHERE TYING INTO EXISTING SANITARY LINES, SNAKE SANITARY LINE CLEAR THROUGH TO EXISTING ACTIVE MAIN.
- FOR SANITARY AND VENT SIZES NOT SHOWN, REFER TO SANITARY ISOMETRIC. FOR RUNOUT/CONNECTION SIZES REFER TO FIXTURE AND EQUIPMENT SCHEDULES.
- FOR DOMESTIC WATER RUNOUT/CONNECTION SIZES REFER TO FIXTURE AND EQUIPMENT SCHEDULES.
- FOR NATURAL GAS RUNOUT/CONNECTION SIZES REFER TO FIXTURE AND EQUIPMENT SCHEDULES.
- MEDICAL GAS RUNOUT/CONNECTION SIZES UNLESS NOTED OTHERWISE SHALL BE:
MA, O2, NO, N, CO2- 1/2"
MV, WAGD - 3/4"

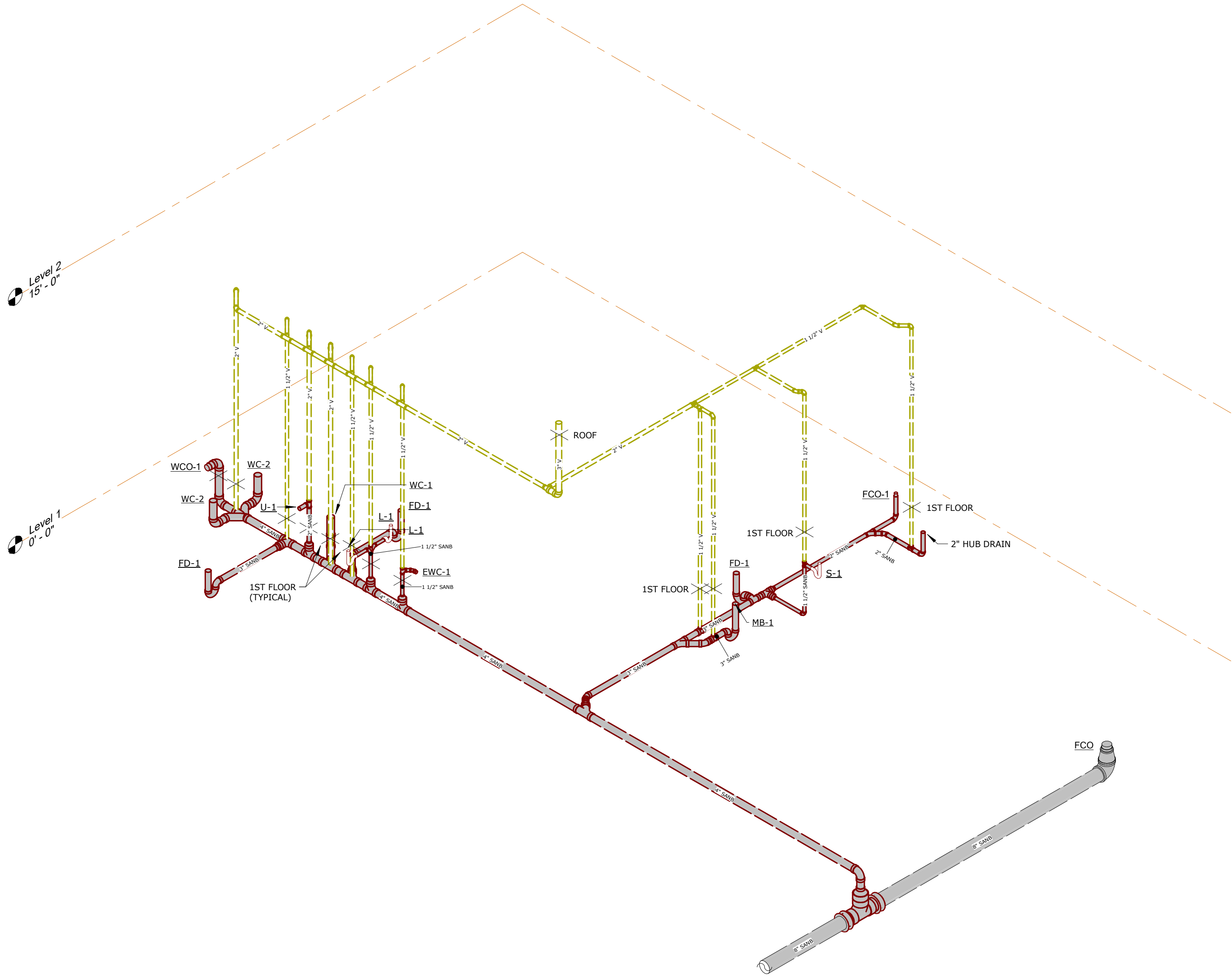


FIRST FLOOR - PLUMBING PLAN

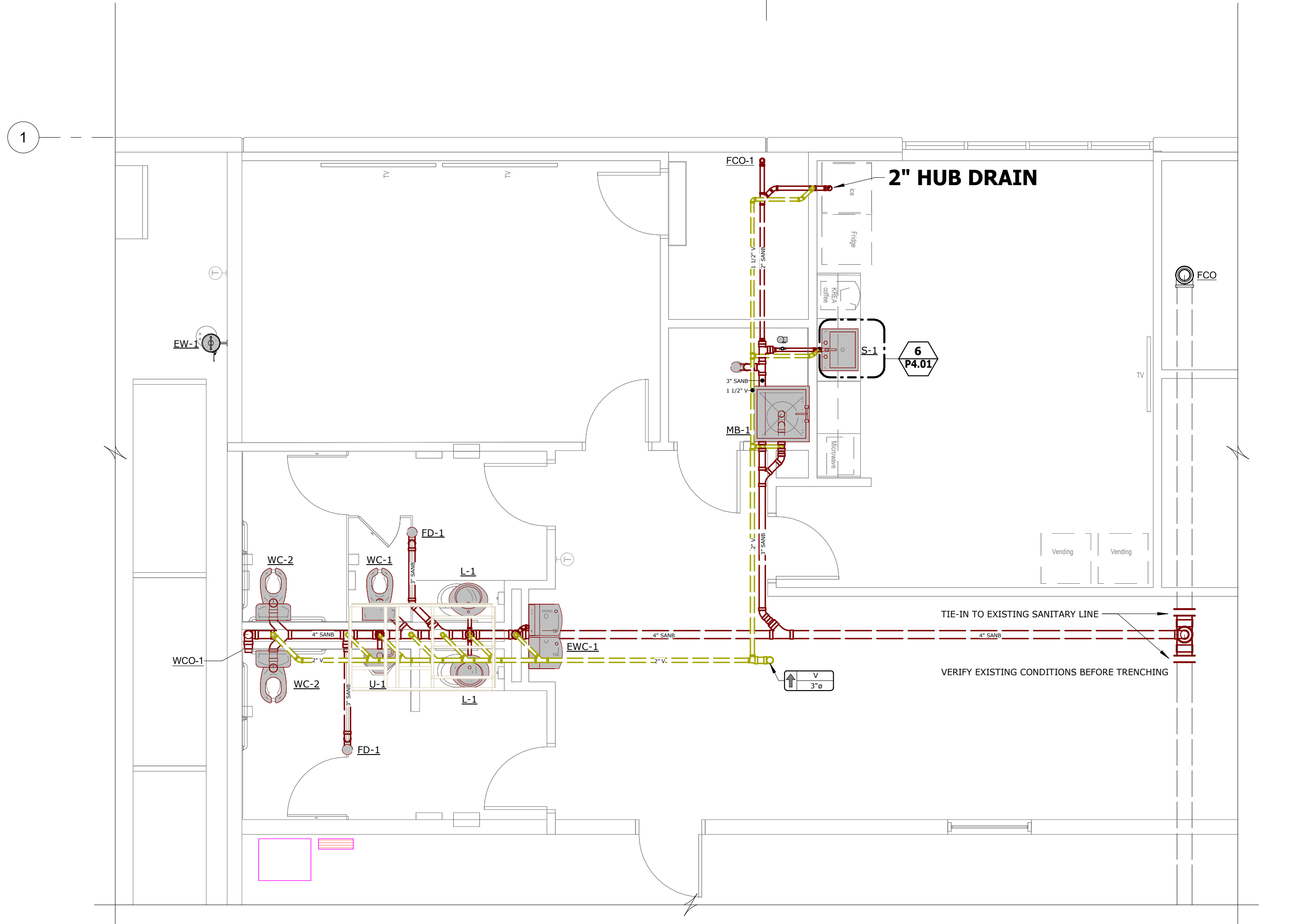
SCALE: 1/8" = 1'-0"

PLUMBING SANITARY ISOMETRIC

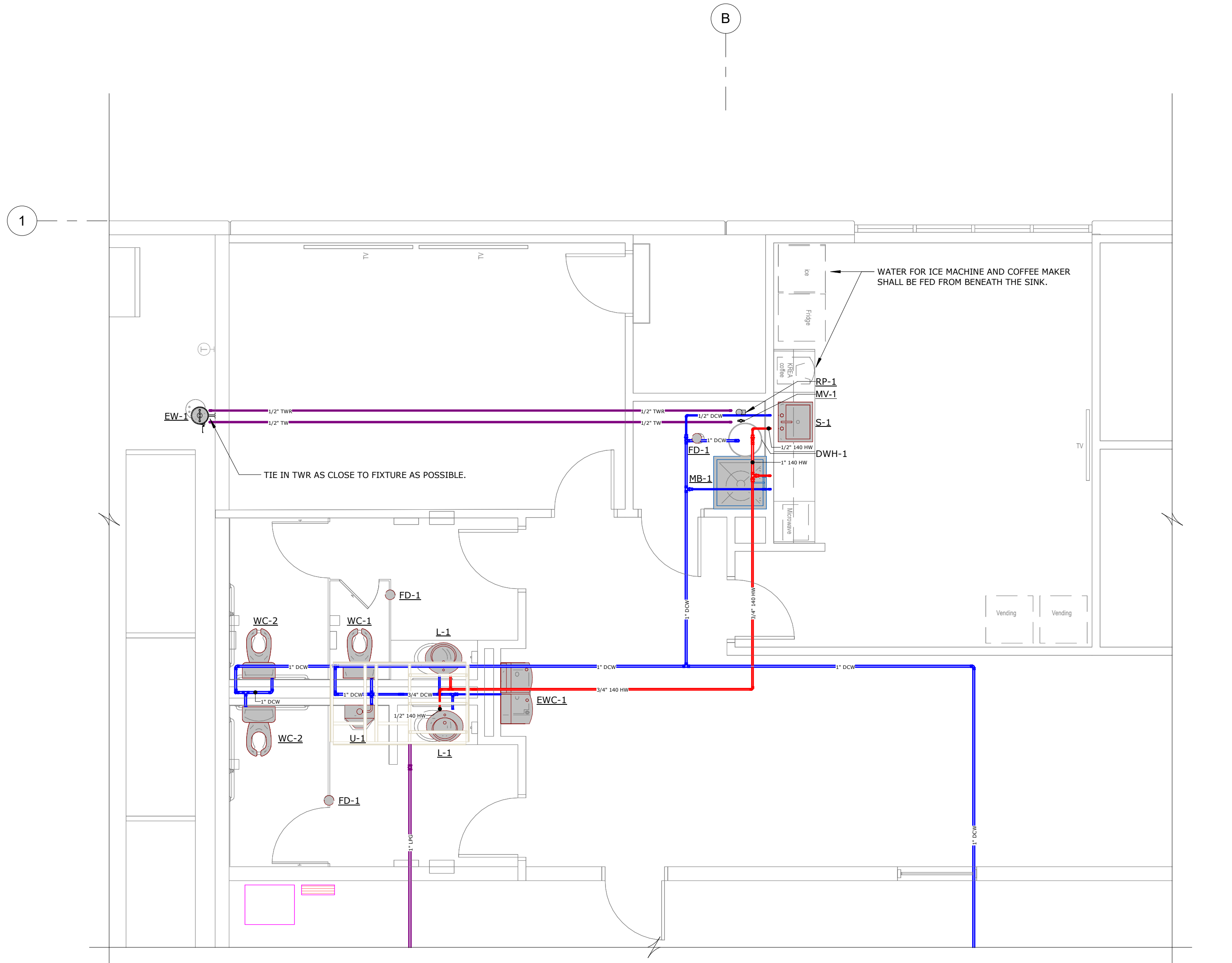
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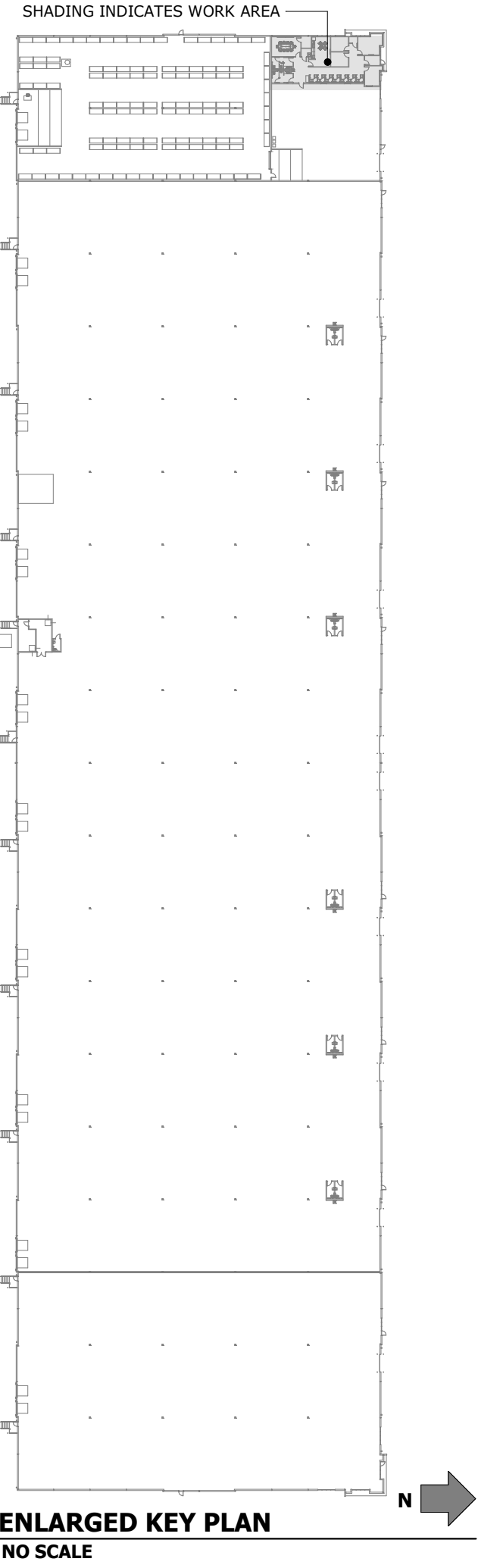
4 FIRST FLOOR - ENLARGED SANITARY AND VENT PLAN
P2.01 1/4" = 1'-0"



2 FIRST FLOOR - ENLARGED PLUMBING PLAN
P2.01 1/4" = 1'-0"



- DRAWING INTERPRETATION NOTES:**
1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
 2. DEMOLITION LINETYPE: THICK (DARK) DASHED LINES REPRESENT EXISTING ITEMS TO BE REMOVED.
 3. RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATION(S). NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBSCURED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
 4. EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
 5. EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).



ENLARGED KEY PLAN
NO SCALE

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

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DRAWING TITLE:
FIRST FLOOR
ENLARGED PLUMBING
PLANS

SHEET #:
P3.01

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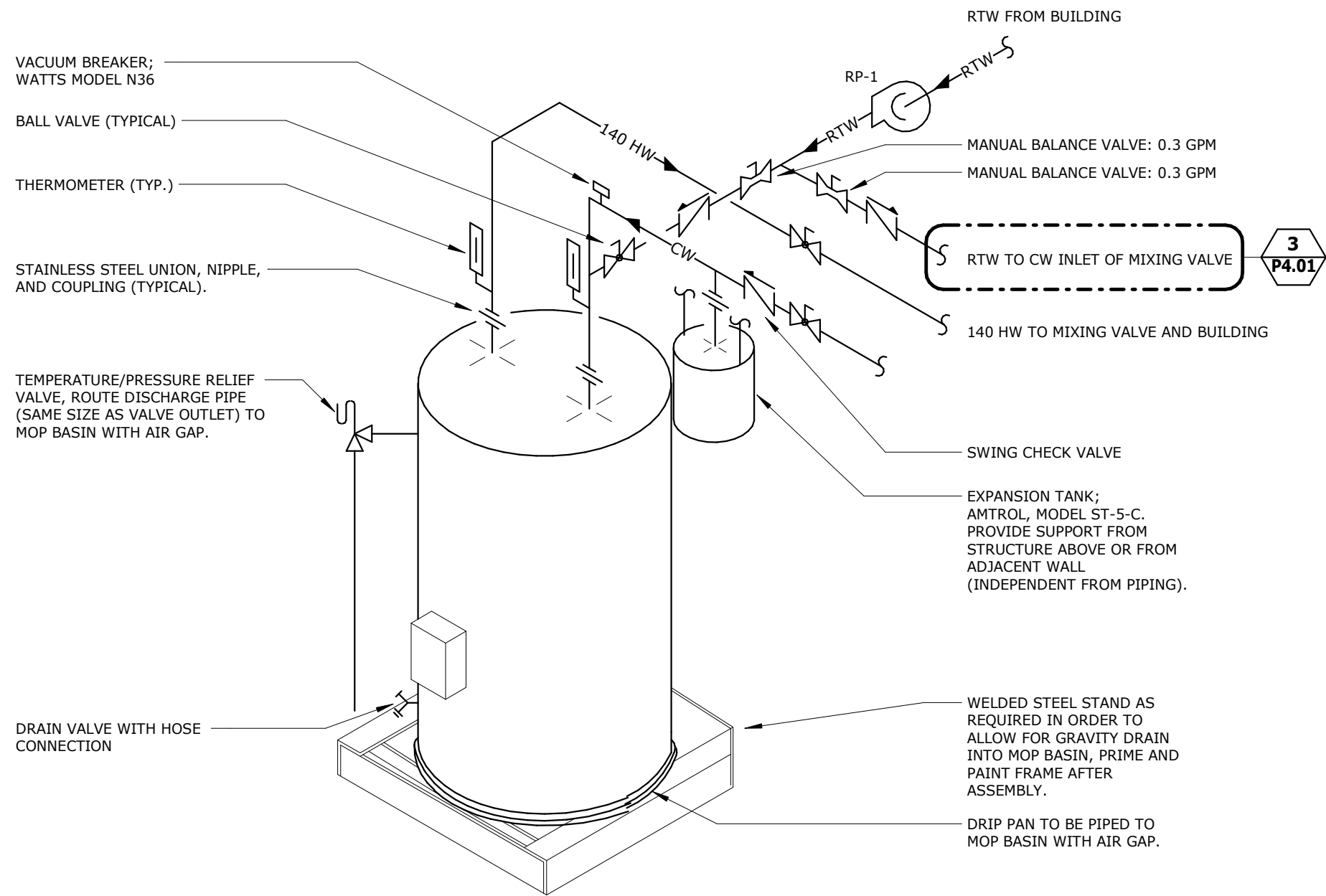


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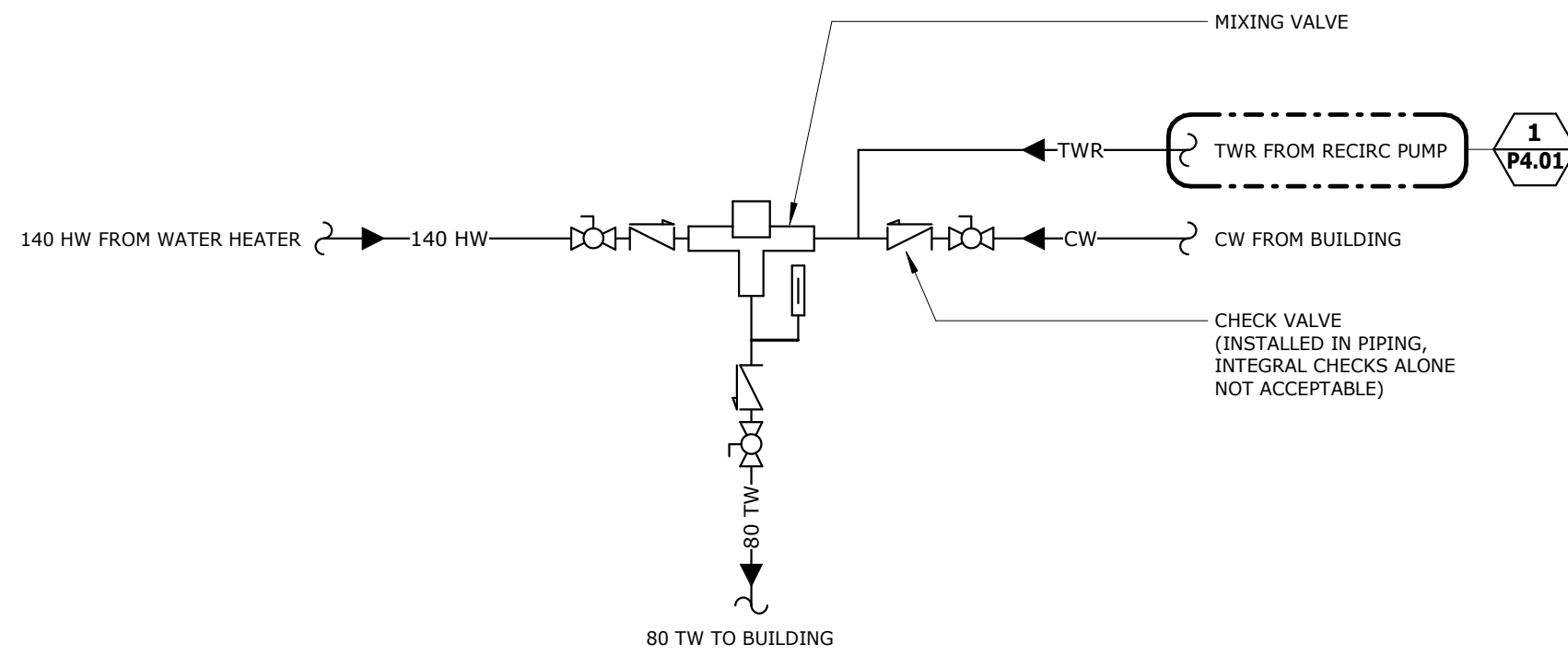
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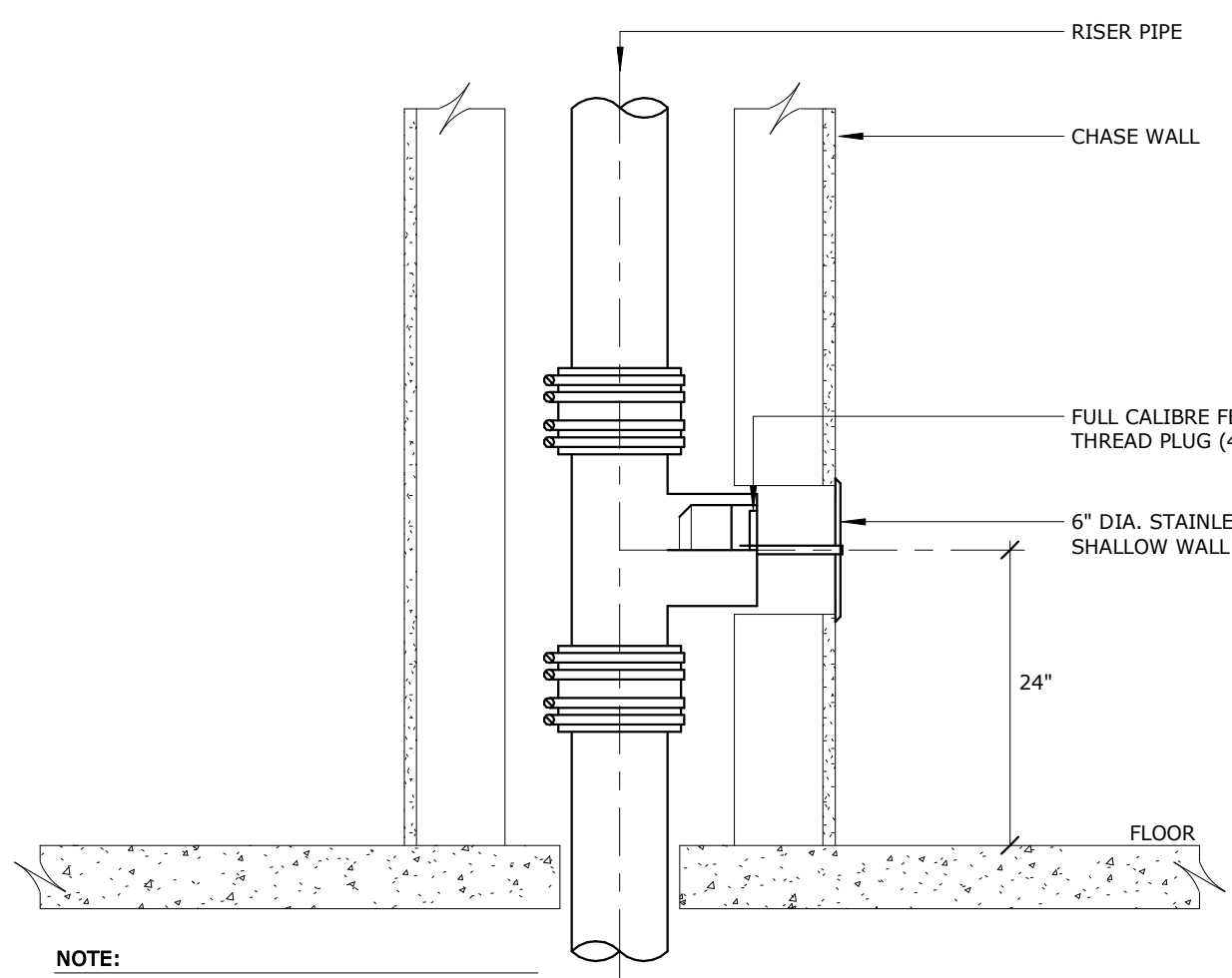
PROJECT:



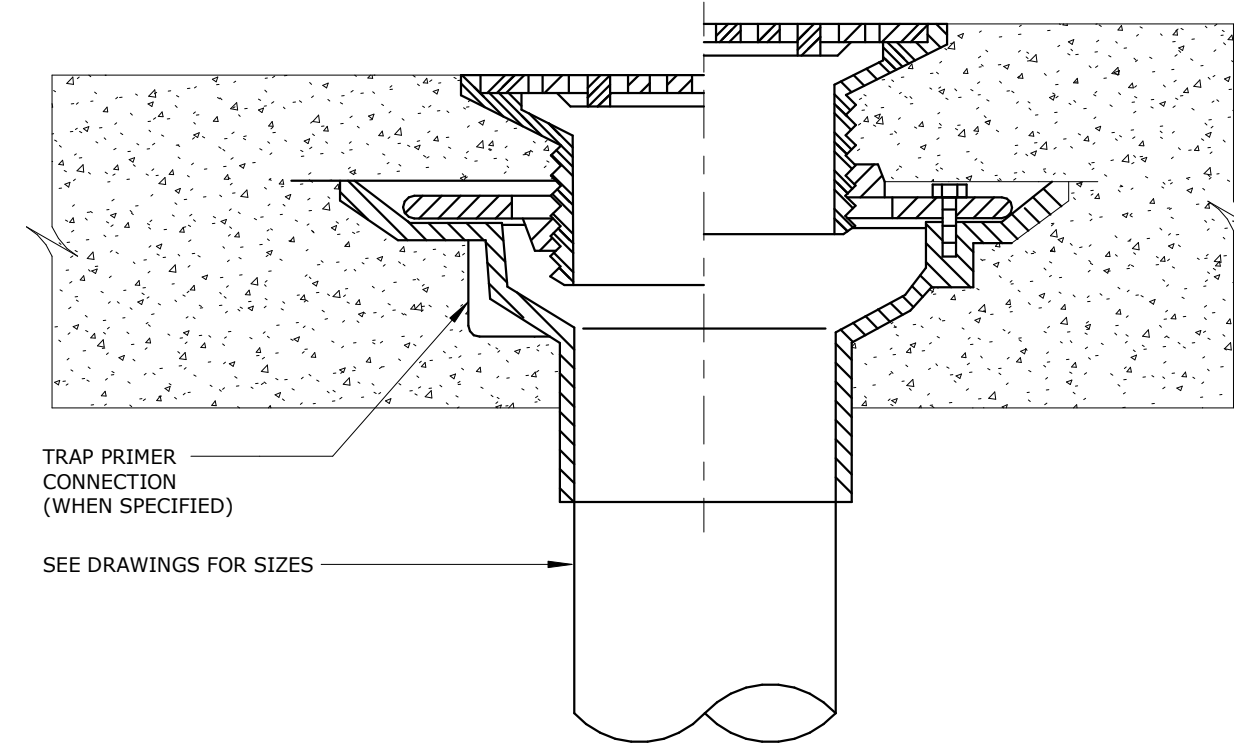
1 22 21 20 - ELECTRIC DOMESTIC WATER HEATER PIPING DETAIL
NO SCALE



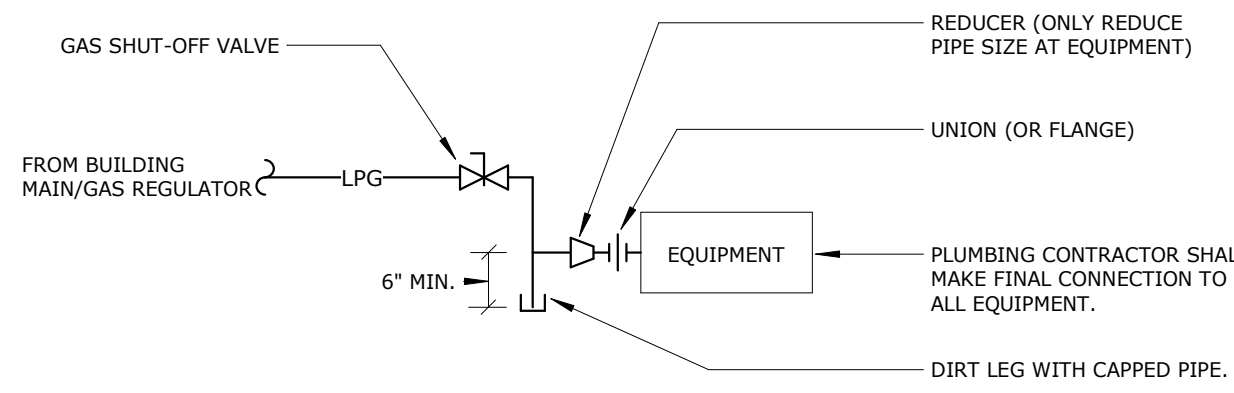
3 22 13 11 - MASTER MIXING VALVE DETAIL
NO SCALE



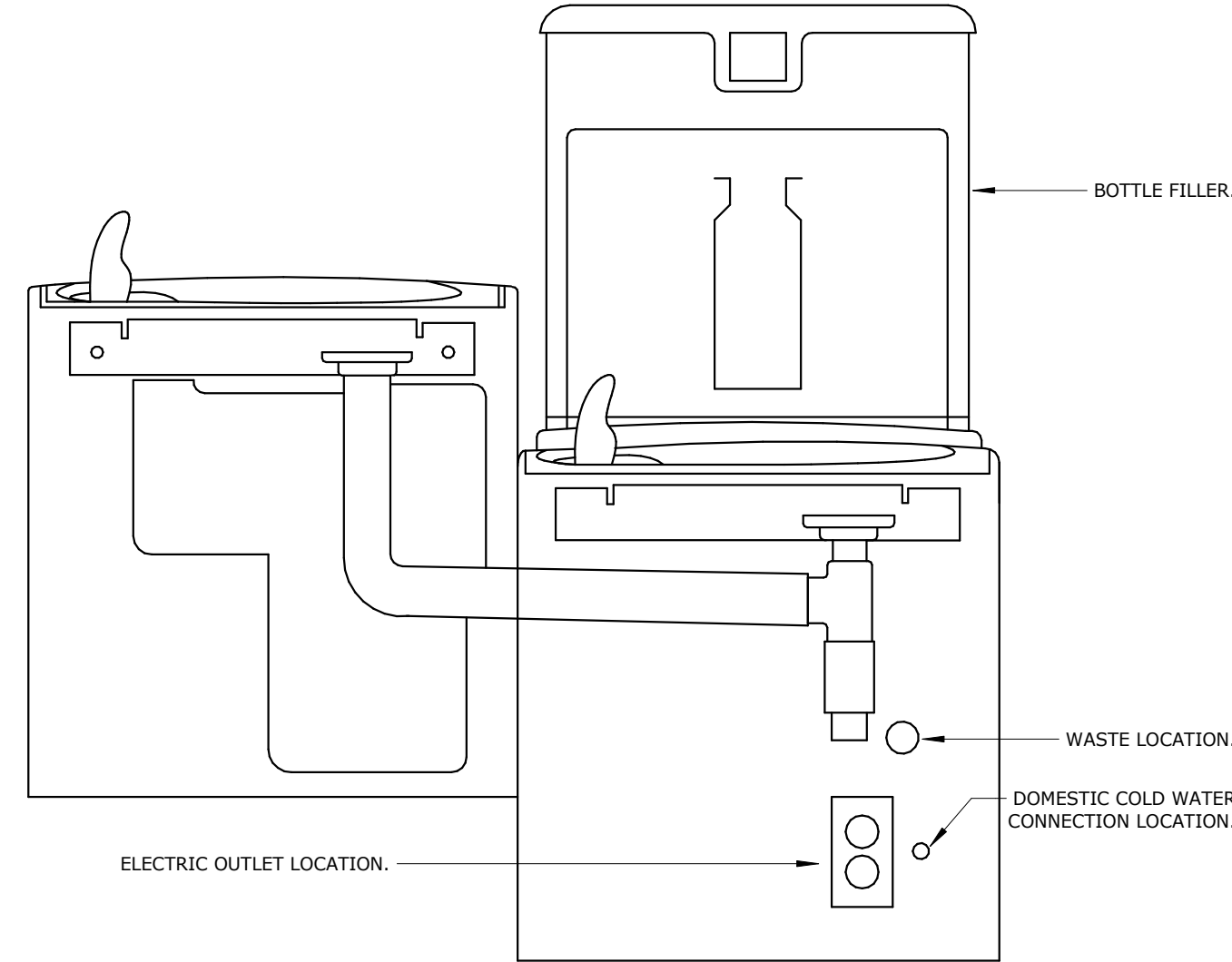
5 22 12 60 - FLUSH WITH WALL CLEANOUT
NO SCALE



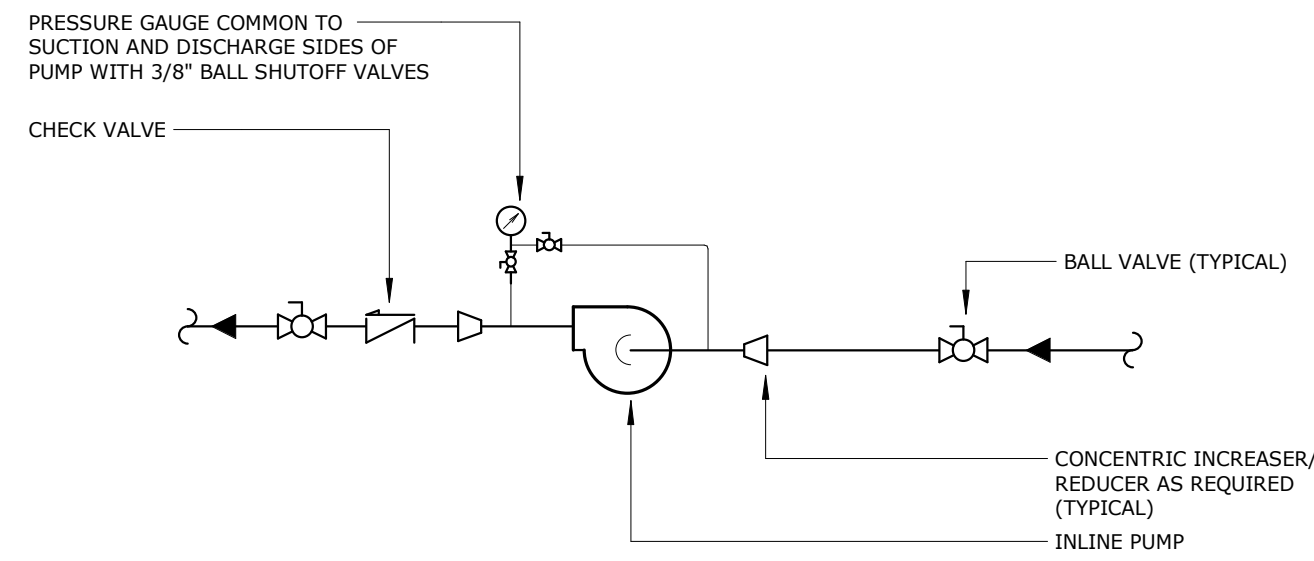
7 22 41 11 - FLOOR DRAIN (ROUND STRAINER) DETAIL
NO SCALE



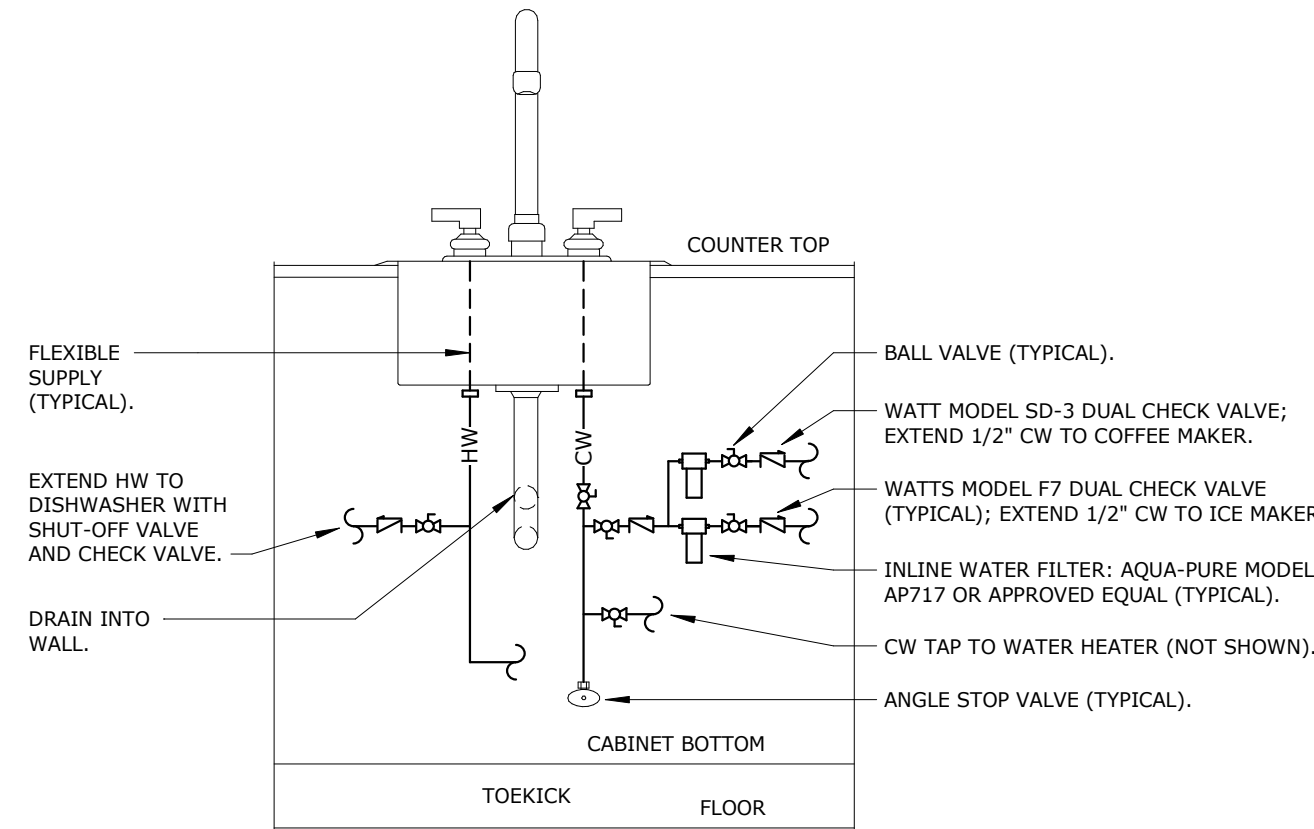
9 22 41 41 - GAS CONNECTION DETAIL
NO SCALE



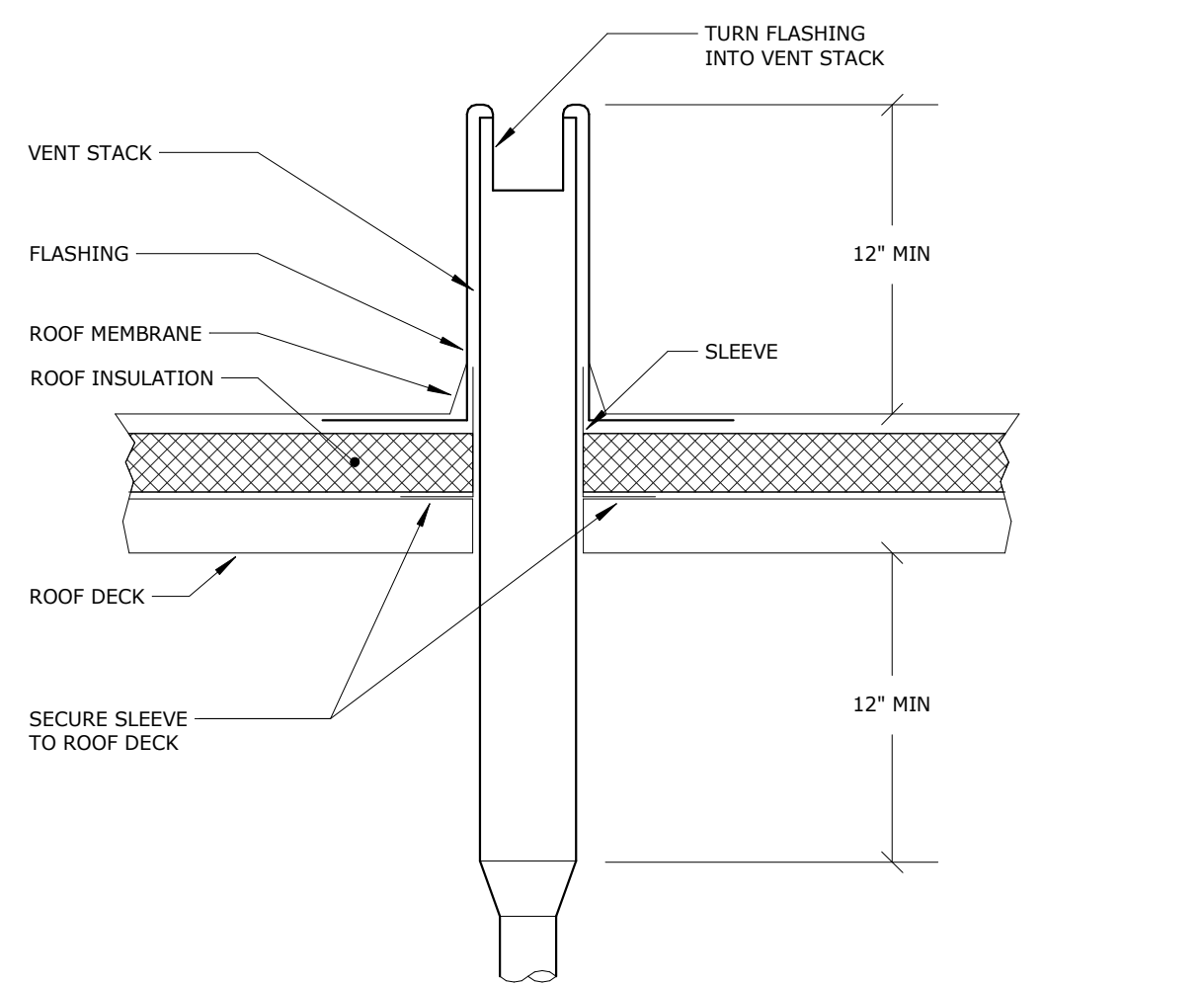
2 22 40 11 - WALL-MOUNTED WATER CLOSET (FLUSH TANK) SCHEDULE
NO SCALE



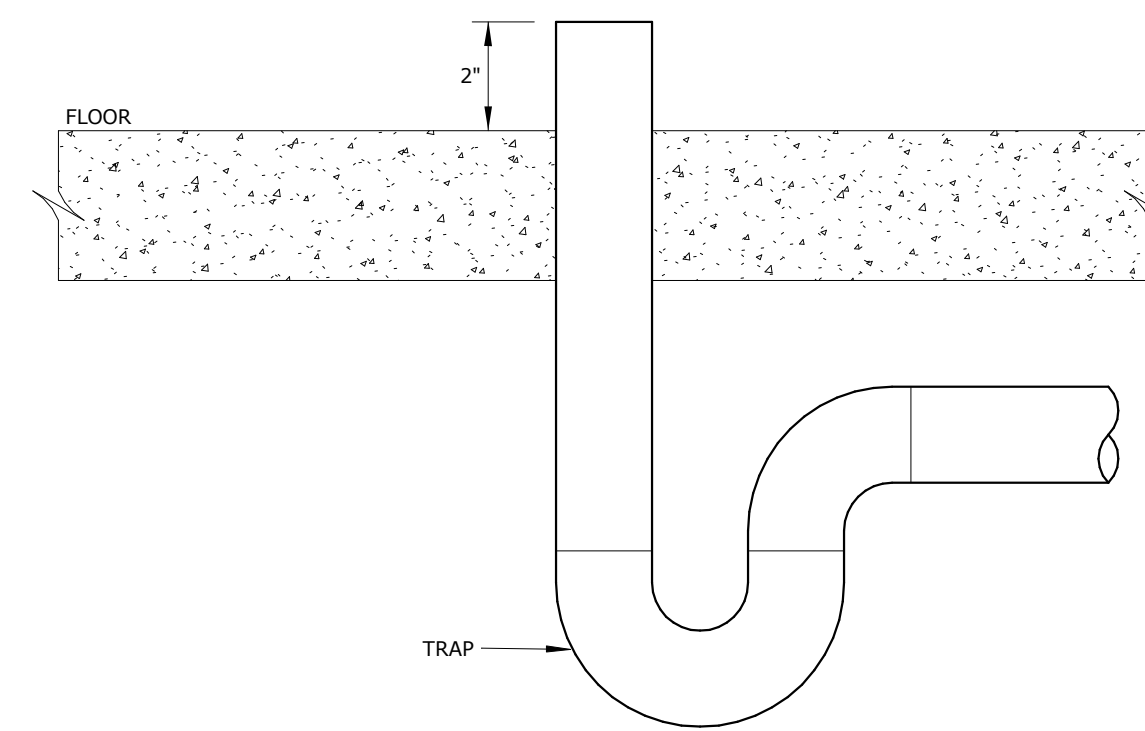
4 22 24 20 - RECIRCULATOR PUMP PIPING DETAIL (WITHOUT AQUASTAT)
NO SCALE



6 22 40 20 - ANCILLARY EQUIPMENT PIPING DETAIL
NO SCALE



8 22 07 10 - VENT THROUGH ROOF INSTALLATION DETAIL (FLAT ROOF)
NO SCALE



10 22 41 10 - HUB DRAIN DETAIL
NO SCALE

22 40 12 - WALL HUNG URINAL													
NOTE: *COORDINATE FLUSH VALVE HANDING WITH ARCHITECT.													
MARK	MANUFACTURER	MODEL	FIXTURE	MANUFACTURER	MODEL	VALVE MANUFACTURER	MODEL	FLUSH	OPERATION	RATE	CONNECTIONS	ADA COMPLIANT	ACCESSORIES
U-1	AMERICAN STANDARD	WASHBROOK 6590.001	J.R. SMITH	FIG 0637	AMERICAN STANDARD	6062.101.002		HANDS-FREE (HARD-WIRED)		1.0 GPF	CW 1" SAN 2" VENT 2"	No	FURNISH WITH HARD-WIRED POWER KIT

22 40 11 - WALL-MOUNTED WATER CLOSET (FLUSH TANK) SCHEDULE																
NOTE: *COORDINATE FLUSH TANK HANDING WITH ARCHITECT.																
MARK	FIXTURE			FLUSH TANK				SEAT			CONNECTIONS			ADA COMPLIANT	RIM HEIGHT	ACCESSORIES
	MANUFACTURER	MODEL		MANUFACTURER	MODEL	OPERATION	RATE	MANUFACTURER	MODEL	COLOR	CW	SAN	VENT			
WC-1	AMERICAN STANDARD	2462.016		AMERICAN STANDARD	4142.016	MANUAL	1.6 GPF	AMERICAN STANDARD	5257A.65C	WHITE	1"	4"	2"	No	15"	
WC-2	AMERICAN STANDARD	2467.016		AMERICAN STANDARD	4142.016	MANUAL	1.6 GPF	AMERICAN STANDARD	5257A.65C	WHITE	1"	4"	2"	Yes	16.5"	

22 40 50 - ELECTRIC WATER COOLER													
NOTE: *INSTALL ELKAY EZWSR BOTTLE FILLER ON LOWER EWC.													
MARK	MANUFACTURER	MODEL	TYPE	QUANTITY OF OUTLETS	ORIFICE HEIGHT	PERFORMANCE	DESIGN	CONNECTIONS	ELECTRICAL				
EWC-1	ELKAY	EZSTLBSLSK	WALL MOUNT	3	42"	36"	8.0 GPH	52 °F 50 °F 9 °F	1/2" 1-1/2" 1-1/2"	115/1	6	3 WIRE GROUNDING TYPE SERVICE CORD	

22 40 32 - MOP BASIN													
MARK	TYPE	FIXTURE	MANUFACTURER	MODEL	STRAINER	FAUCET	CONNECTIONS	ACCESSORIES					
MB-1	MOP BASIN - TERRAZZO	FIAT	63M (32x32x12)	INTEGRAL MOLDED	CHICAGO FAUCETS	897-CCP	HANDLES-FREE	2-3/8" LEVER	3/4" HOSE THREAD CONNECTION	1/2" 1/2" 3"	1 1/2"	WALL GAUARD: MSG, HOSE BRACKET: 832AA	

22 13 11 - MIXING VALVE SCHEDULE													
MARK	MANUFACTURER	MODEL	CONNECTIONS			WATER FLOW			PRESSURE DROP @			SETPOINT	REMARKS
			140 HW	CW	80 TW	MIN	MAX	DESIGN	DESIGN FLOW	DESIGN FLOW	DESIGN FLOW		
MV-1	LEONARD	TA-300-LF	1/2"	1/2"	1/2"	0.3 GPM	12.0 GPM	3.2 GPM	22.50 psi	80 °F	PROVIDE WITH INTEGRAL DIAL THERMOMETER		

22 40 14 - COUNTER MOUNTED LAVATORY SCHEDULE													
NOTE: *COORDINATE SINK SIZE WITH CASEWORK FOR PROPER FITMENT PRIOR TO ORDERING.													
MARK	TYPE	FIXTURE	MANUFACTURER	MODEL	FAUCET	CONNECTIONS	ACCESSORIES						
L-1	COUNTER MOUNTED	AMERICAN STANDARD	RELIANT 0475247	SLOAN	SF-2100-4-PLG-BDM-CP-05GPM-MLM-IR-FCT	HANDS-FREE	0.5 GPM	1/2" 1/2" 1-1/2" 1-1/2"	THERMOSTATIC MIXING VALVE: LEONARD VALVE LF-170				

22 40 20 - STAINLESS STEEL SINK SCHEDULE													
NOTE: *COORDINATE SINK SIZE WITH CASEWORK FOR PROPER FITMENT PRIOR TO ORDERING. *FURNISH WITH THERMOSTATIC MIXING VALVE: LEONARD VALVE, MODEL 170-LF													
MARK	TYPE	FIXTURE	MANUFACTURER	MODEL	STRAINER	FAUCET	CONNECTIONS	ACCESSORIES					
S-1	SINGLE BOWL STAINLESS STEEL SINK	ELKAY	ELUHAD211555	LK99	GROHE	CONCETTO	SINGLE HANDLE	1.75 GPM	1/2" 1/2" 1 1/2" 1 1/2"				

22 21 20 - ELECTRIC WATER HEATER													
MARK	MANUFACTURER	MODEL	SERVICE	TYPE	INPUT (KW)	STORAGE CAPACITY (GALLONS)	GPH	EW	LWT	VOLTS/PHASE	FLA	DISCONNECT	
DWH-1	A.O. SMITH	DEN-30	DOMESTIC HOT WATER	ELECTRIC	10	37	41	52 °F	140 °F	480/3	12.1	BY EC	

22 24 20 - RECIRCULATOR PUMP SCHEDULE													
NOTE: 1. HARDWIRED POWER.													
MARK	MANUFACTURER	MODEL	SERVICE	TYPE	THREADED CONNECTION	GPM	HEAD PRESSURE (FT)	HP	RPM	VOLTS/PHASE			
RP-1	TACO	003-B4	DOMESTIC HOT WATER RECIRC	IN-LINE	3/4"	0.5	1.5	1/40	3250	115/1			

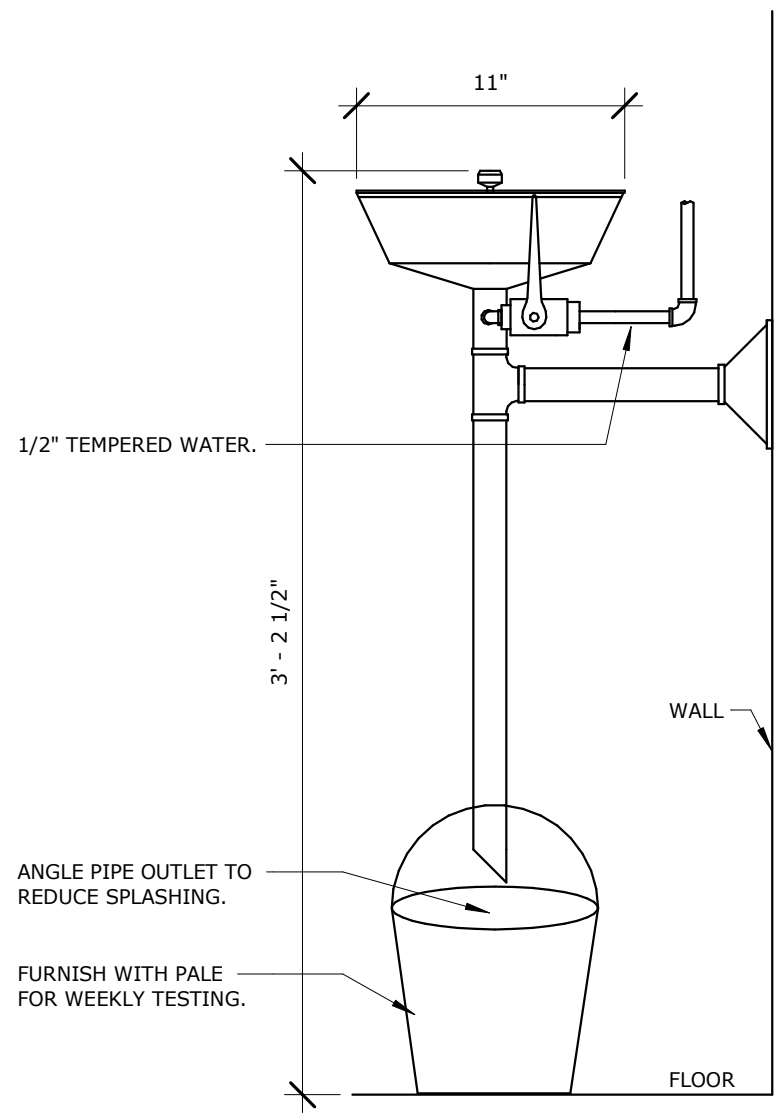
22 41 11 - FLOOR DRAIN SCHEDULE													
MARK	MANUFACTURER	MODEL	STRAINER SIZE	CONNECTION SIZE	TRAP SEAL								
FD-1	JAY R. SMITH	2005-NB	06 DIA	3"	QUAD SEAL 2692								

22 40 92 - EYEWASH SCHEDULE (EW)													
MARK	MANUFACTURER	MODEL	FINISH	MOUNTING LOCATION									
EW-1	GUARDIAN	G1814P	ORANGE ABS PLASTIC	WALL MOUNT									
EW-2	GUARDIAN	G1540	GREEN POLYETHYLENE	WALL MOUNT									

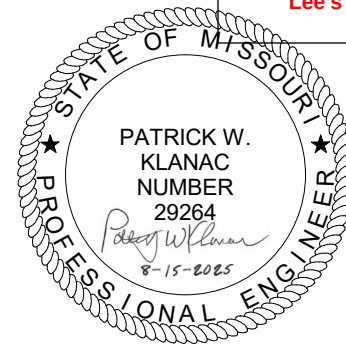
22 12 60 - CLEANOUT SCHEDULE													
MARK	MANUFACTURER	MODEL	CONNECTION SIZE	REMARKS									
FCO-1	SMITH	4031	MATCH PIPE SIZE										
WCO-1	SMITH	4422C	MATCH PIPE SIZE										

PLUMBING PIPE AND FITTING SCHEDULE													
* WHERE MORE THAN ONE TYPE OF MATERIAL IS INDICATED AS AN OPTION, SELECTION IS INSTALLER'S CHOICE.													
SERVICE		SIZE	PIPE MATERIAL	FITTINGS	JOINTS								
DOMESTIC WATER - ABOVE GROUND		4" AND SMALLER	TYPE L HARD COPPER	WROUGHT COPPER	SOLDERED								
NATURAL GAS - ABOVE GROUND		2" AND SMALLER	SCHEDULE 40 BLACK STEEL	MALLEABLE IRON	THREADED								
NATURAL GAS - ABOVE GROUND		2" AND LARGER	SCHEDULE 40 BLACK STEEL	FACTORY FORMED	WELDED								

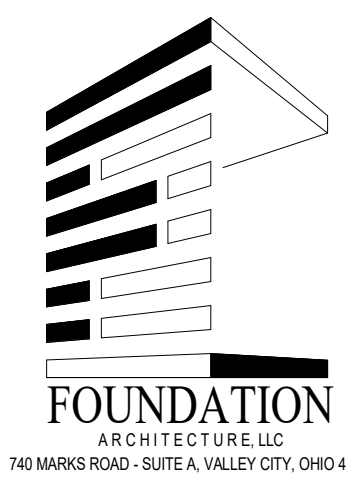
PLUMBING INSULATION SCHEDULE				
INSULATION TYPE DESCRIPTIONS				
FP	PREFORMED ONE-PIECE FIBERGLASS PIPE INSULATION WITH ALL-SERVICE JACKET; MAXIMUM THERMAL CONDUCTIVITY K=0.23 AT 75 DEG. F MEAN TEMPERATURE.			
ER	FLEXIBLE, CLOSED-CELL, ELASTOMERIC ROLL INSULATION; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.			
EP	FLEXIBLE UNICELLULAR, PREFORMED ELASTOMERIC PIPE INSULATION; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.			
INSULATION FINISH DESCRIPTIONS				
AJ	0.016" THICK SHEET ALUMINUM JACKET WITH MOLDED UV RESISTANT PVC FITTING COVERS			
ASJ	ALL SERVICE JACKET WITH SELF-SEAL LAP			
SERVICE		TYPE	THICKNESS	FINISH
DOMESTIC HOT, RECIRCULATING HOT, AND COLD WATER PIPING		FP	1"	ASJ
FLOOR DRAINS, TRAPS OF FLOOR DRAINS, AND HORIZONTAL SANITARY PIPING RECEIVING COOLING COIL CONDENSATE DRAINAGE OR ICE MACHINE DRAINAGE		EP	1/2"	-



11 22 40 92 - EYEWASH MOUNTING AND PIPING
NO SCALE



SEAL



275 Springside Dr., Suite 300
Akron, Ohio 44333
Phone: 330-666-3702
ptaengineering.com

PROJECT:

TENANT IMPROVEMENTS FOR:

SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED: 08/15/2025

PROJECT #: 016-0402
DRAWN BY: PTA, INC. CHECKED BY: JSC

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PLUMBING SCHEDULES
AND DETAILS

SHEET #:

P4.01



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743 MARKS ROAD - SUITE A, VALLEY CITY, OHIO 44280

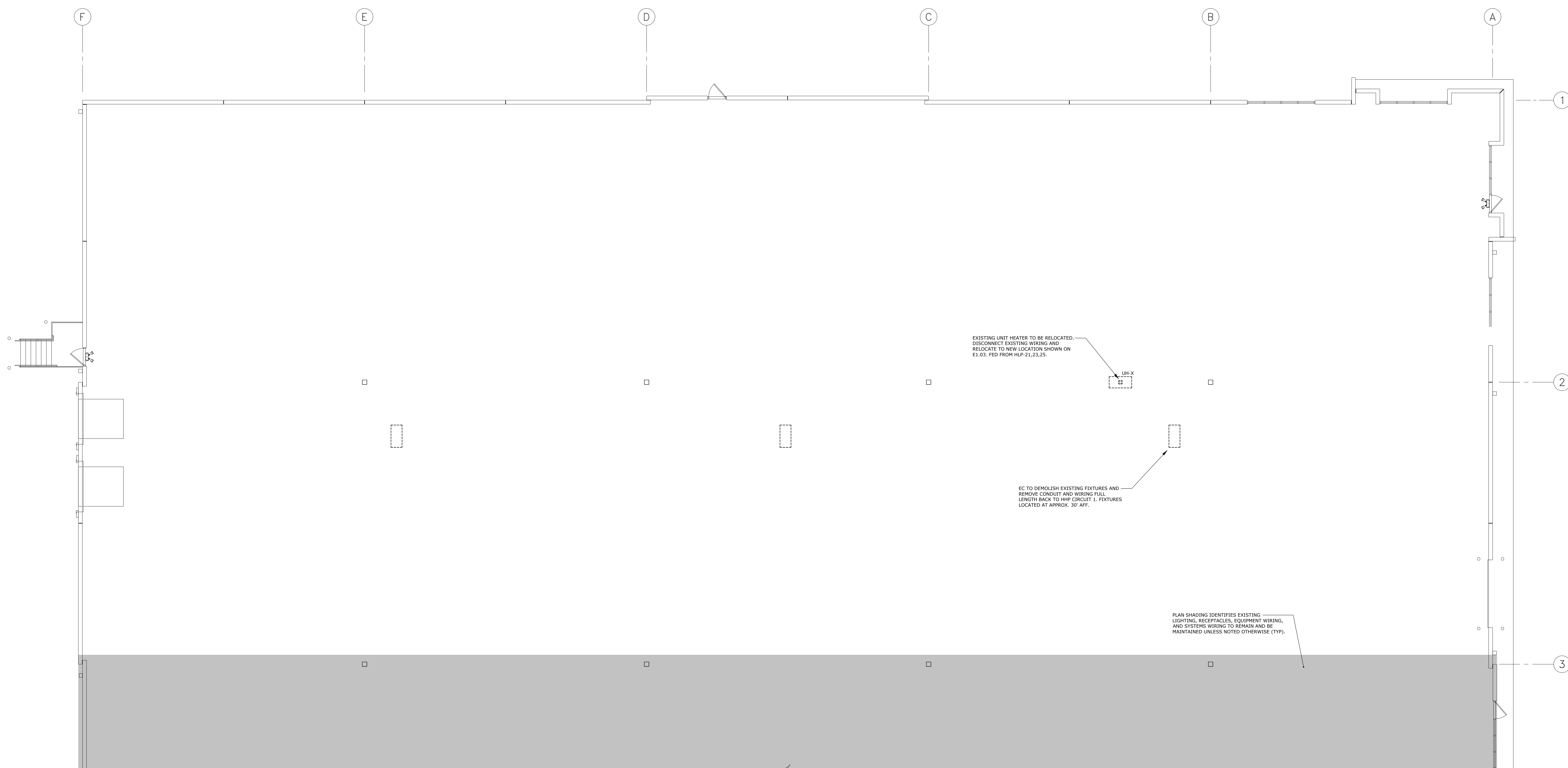
PROJECT

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LEE'S SUMMIT, MISSOURI 64064

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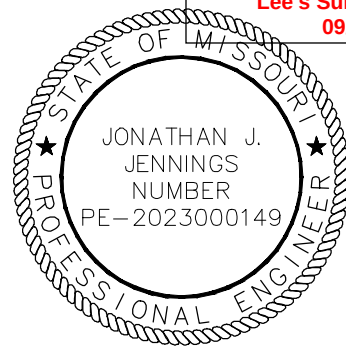
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SHEET #:
E0.01



ELECTRICAL DEMOLITION PLAN

ARCH E1 (30.00 X 42.00 INCHES) 138-25-25 - Adam Spray - 2025-08-18:11:40



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ptaengineering.com

PROJECT:

TENANT IMPROVEMENTS FOR:

SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 08/15/2025
ADDENDUM A 09/10/2025

PROJECT #: 016-0402

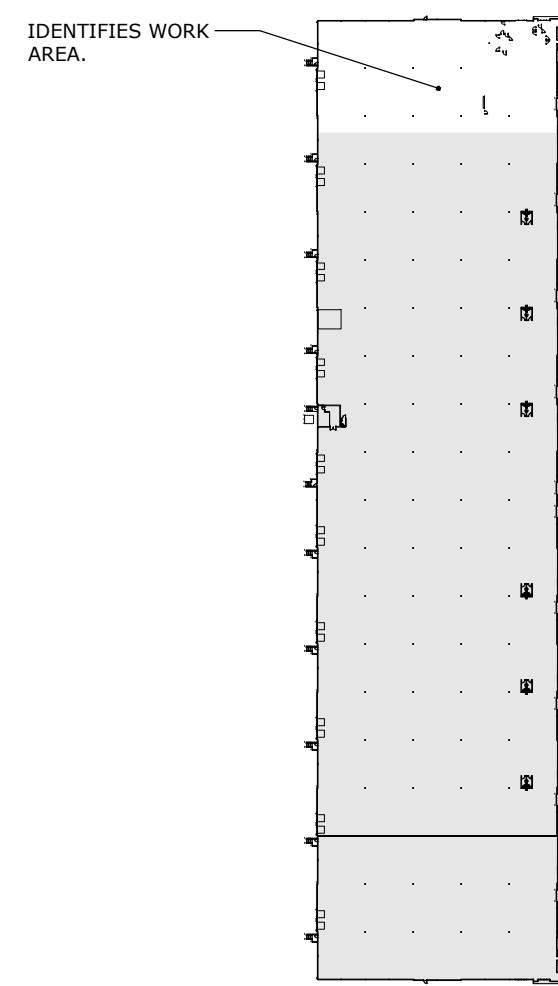
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DRAWING TITLE:
LIGHTING
PLAN

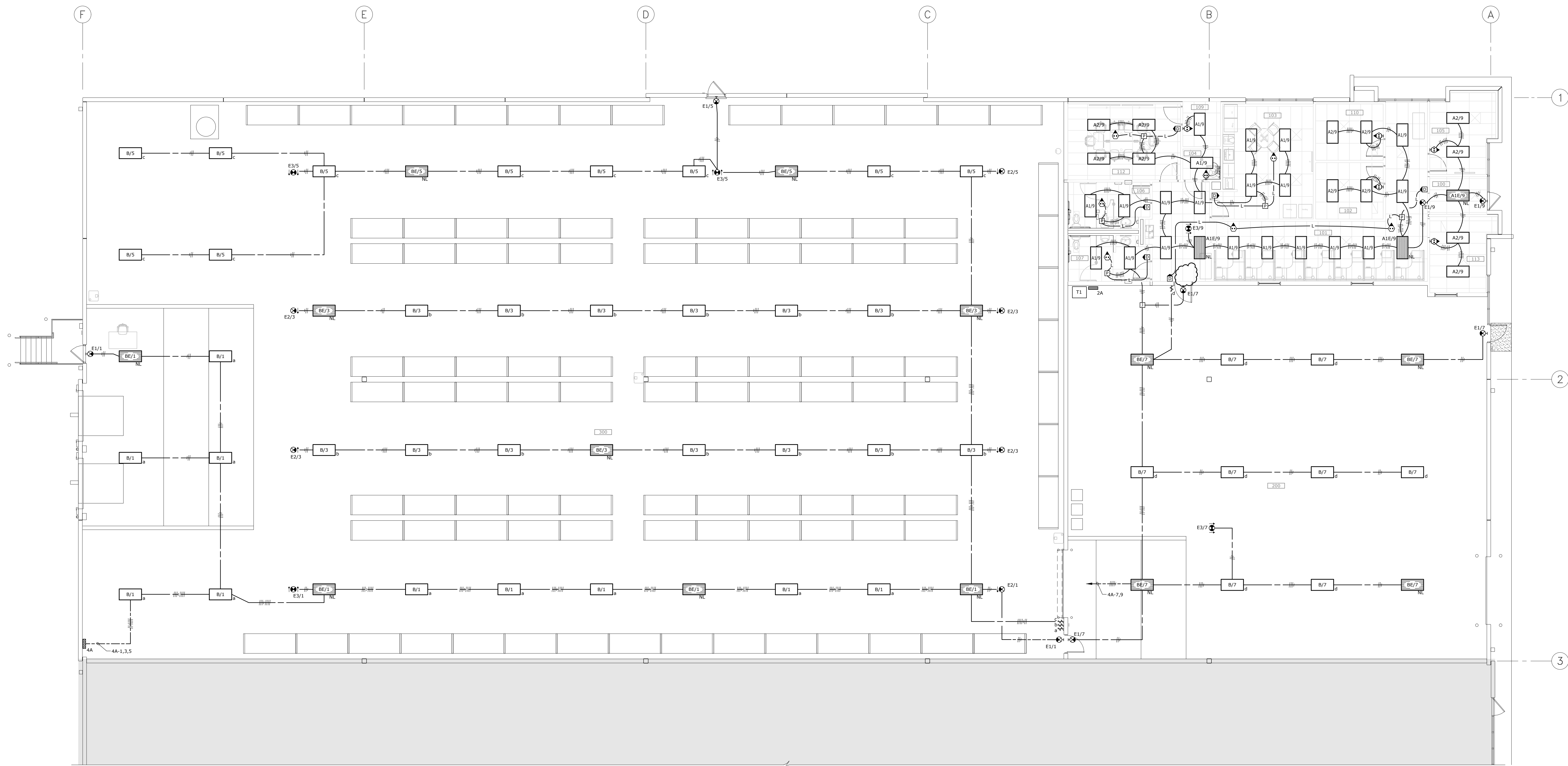
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E1.01



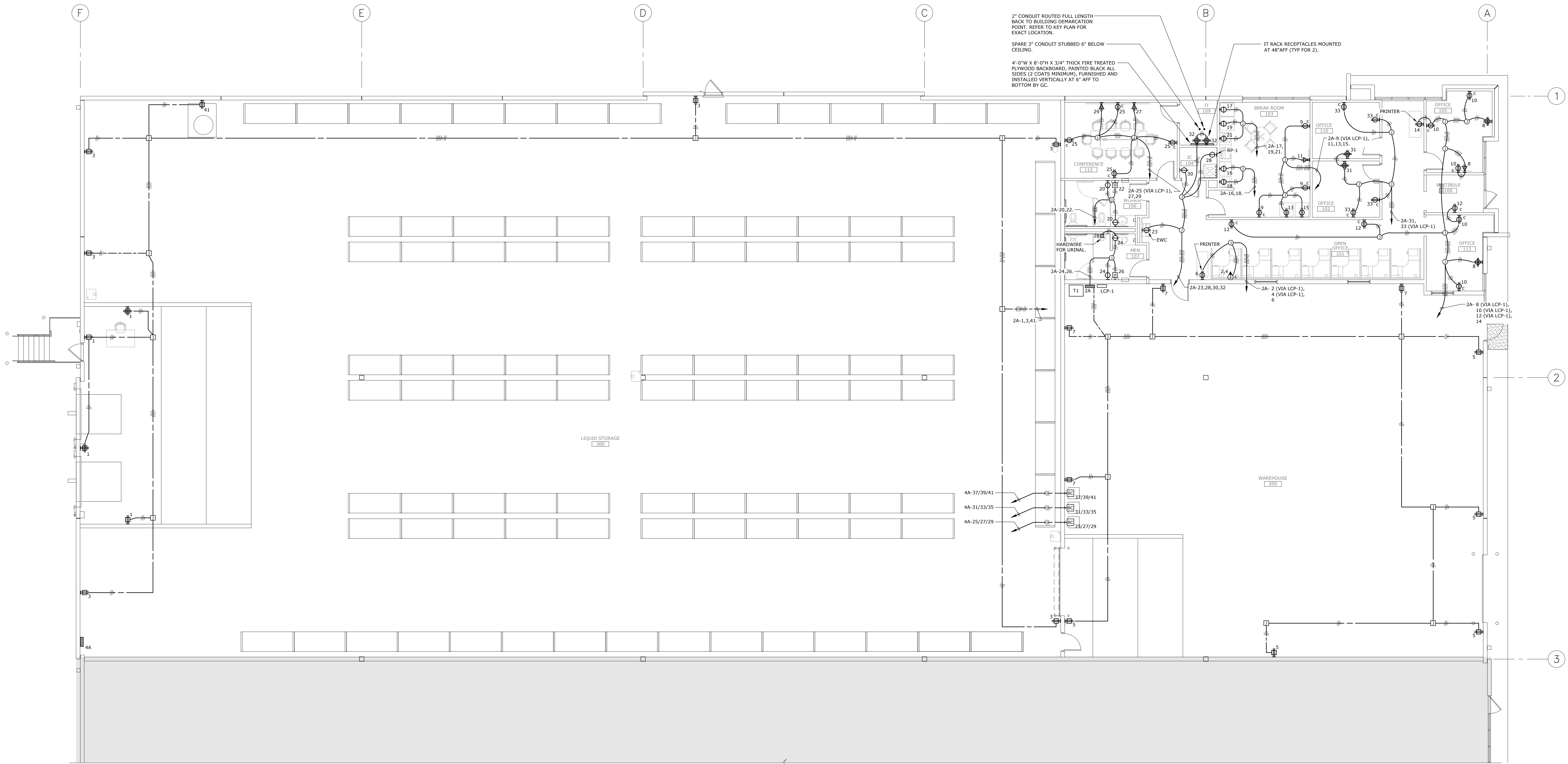
KEY PLAN SCALE: 1"=200'-0"

- NOTES:**
1. BRANCH CIRCUIT CONDUCTOR SIZES SHALL MINIMALLY BE #12 AWG. WHERE THE LENGTH OF A HOMERUN, FROM PANEL TO FIRST DEVICE, EXCEEDS 75 FEET FOR A 120 VOLT CIRCUIT OR 175 FEET FOR A 277 VOLT CIRCUIT, THE MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG.
 2. DEVICES INSTALLED IN FIRE RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH IBC ARTICLE 714.4.2. COORDINATE WALL TYPES WITH THE ARCHITECTURAL DRAWINGS.
 3. PLAN SHADING IDENTIFIES EXISTING LIGHTING, RECEPTACLES, EQUIPMENT WIRING, AND SYSTEMS WIRING TO REMAIN AND BE MAINTAINED UNLESS NOTED OTHERWISE (TYP).



ARCH E1 (30.00 X 42.00 INCHES) 186-26-25 - Jonathan Jennings - 2025-06-18 12:37

RECEPTACLE WIRING PLAN



- NOTES:**
1. BRANCH CIRCUIT CONDUCTOR SIZES SHALL MINIMALLY BE #12 AWG. WHERE THE LENGTH OF A HOMERUN, FROM PANEL TO FIRST DEVICE, EXCEEDS 75 FEET FOR A 120 VOLT CIRCUIT OR 175 FEET FOR A 277 VOLT CIRCUIT, THE MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG.
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 3. PLAN SHADING IDENTIFIES EXISTING LIGHTING, RECEPTACLES, EQUIPMENT WIRING, AND SYSTEMS WIRING TO REMAIN AND BE MAINTAINED UNLESS NOTED OTHERWISE (TYP).

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
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PROJECT # 016-0402
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DRAWING TITLE:
RECEPTACLE
PLAN

SHEET #:
E1.02

RELEASED FOR
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
08/15/2025

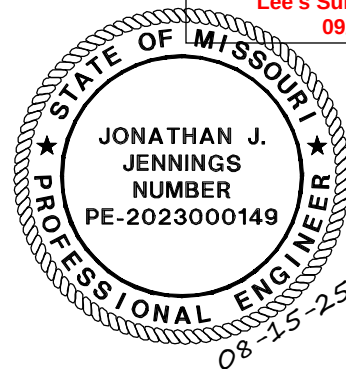
STATE OF MISSOURI
JONATHAN J. JENNINGS
NUMBER PE-2023000149
PROFESSIONAL ENGINEER
08-22-25

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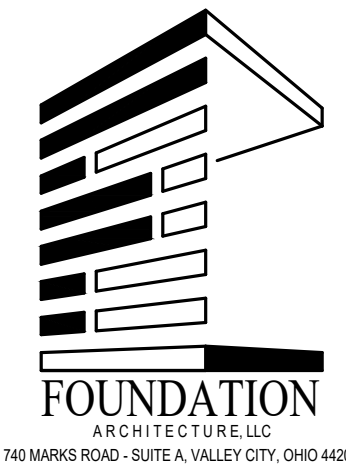
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PROJECT:



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PROJECT:

TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

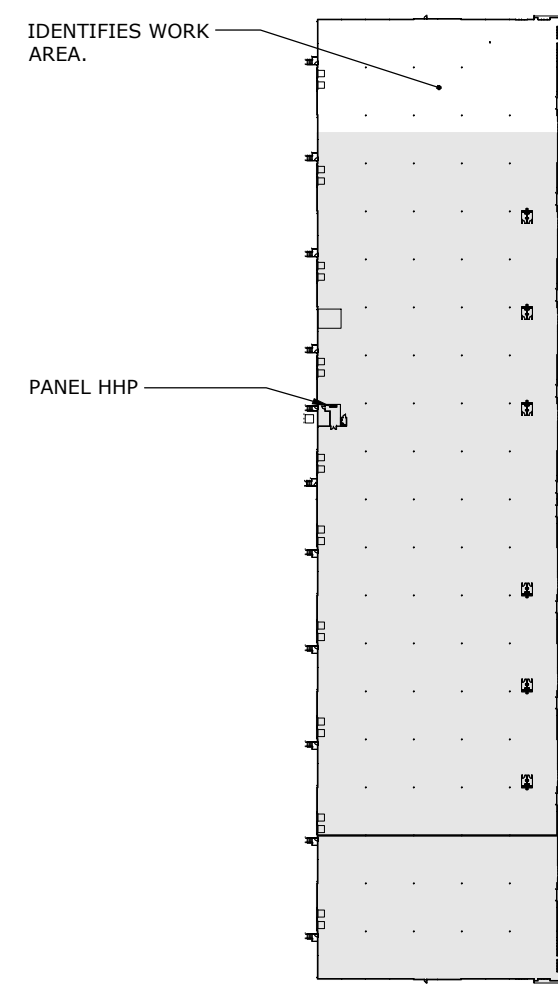
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DRAWING TITLE:
EQUIPMENT WIRING
PLAN

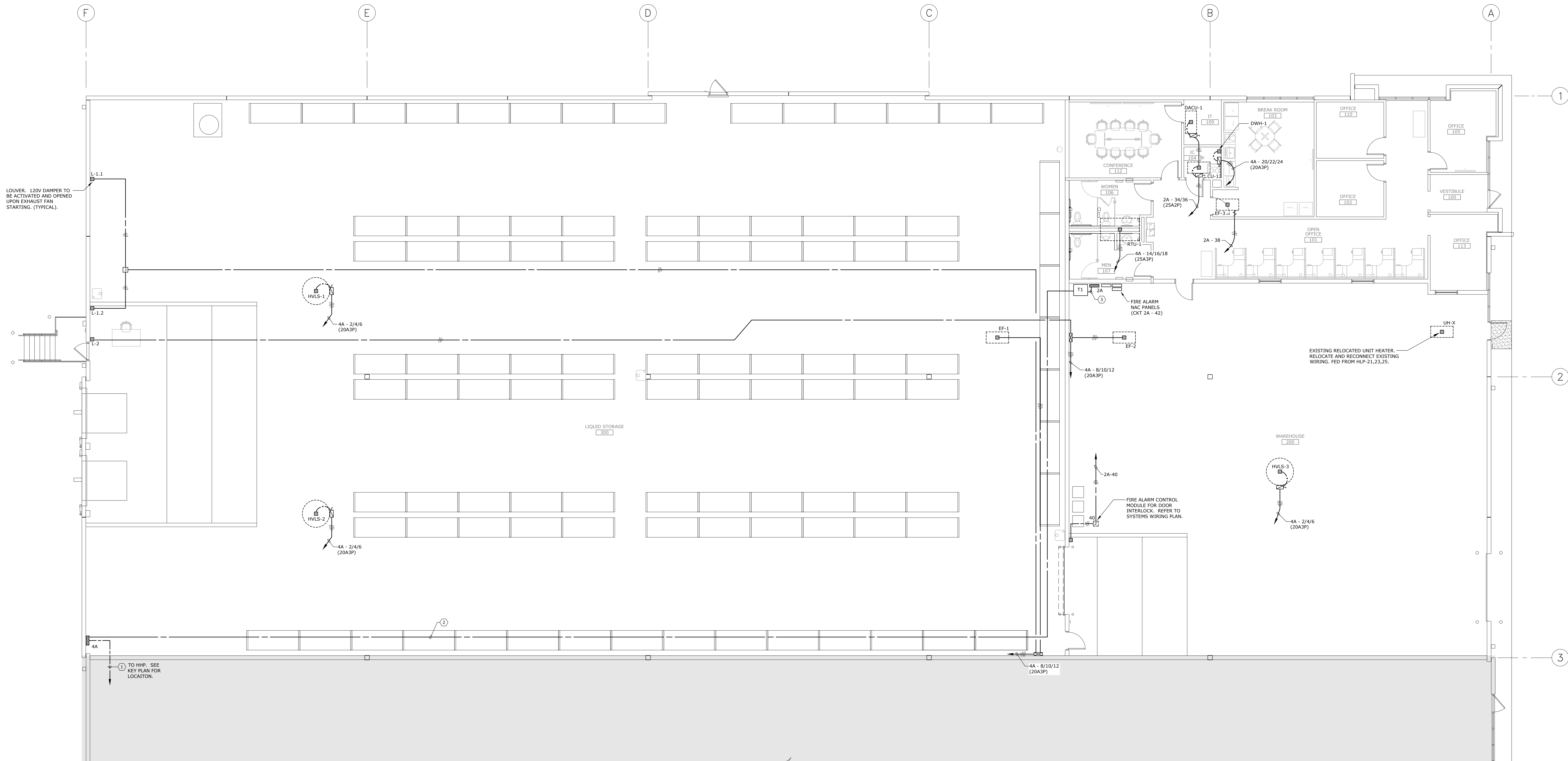
SHEET #:
E1.03



KEY PLAN SCALE: 1"=200'-0"

- NOTES:**
- BRANCH CIRCUIT CONDUCTOR SIZES SHALL MINIMALLY BE #12 AWG. WHERE THE LENGTH OF A HOMERUN, FROM PANEL TO FIRST DEVICE, EXCEEDS 75 FEET FOR A 120 VOLT CIRCUIT OR 175 FEET FOR A 277 VOLT CIRCUIT, THE MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG.
 - DEVICES INSTALLED IN FIRE RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH IBC ARTICLE 714.4.2. COORDINATE WALL TYPES WITH THE ARCHITECTURAL DRAWINGS.
 - PLAN SHADING IDENTIFIES EXISTING LIGHTING, RECEPTACLES, EQUIPMENT WIRING, AND SYSTEMS WIRING TO REMAIN AND BE MAINTAINED UNLESS NOTED OTHERWISE (TYP).
 - IDENTIFIES FEEDER. REFER TO DISTRIBUTION DIAGRAM.

MECHANICAL EQUIPMENT SCHEDULE			
ITEM	DESCRIPTION	LOAD	REMARKS
CU-1	CONDENSING UNIT	208V, 1Ø, 11 MCA, 28A MOCB	DISCONNECT BY EC, FEEDS DACU-1
DACU-1	DUCTLESS AIR CONDITIONING UNIT	208V, 1Ø, 0.2 FLA	DISCONNECT BY EC, FED FROM CU-1
EF-1	EXHAUST FAN	480V, 3Ø, 5 HP	DISCONNECT BY MFR, STARTER BY EC
EF-2	EXHAUST FAN	480V, 3Ø, 2 HP	DISCONNECT BY MFR, STARTER BY EC
EF-3	EXHAUST FAN	120V, 1Ø, 1/6 HP	DISCONNECT BY MFR, STARTER BY EC
RTU-1	ROOF TOP UNIT	480V, 3Ø, 20 MCA, 25A MOCB	DISCONNECT BY MFR
L-1.1	LOUVER	120V, 1Ø, 2 FLA	
L-1.2	LOUVER	120V, 1Ø, 2 FLA	
L-2	LOUVER	120V, 1Ø, 2 FLA	
HVLS-1	HVLS FAN	480V, 3Ø, 2.5 FLA	DISCONNECT BY EC
HVLS-2	HVLS FAN	480V, 3Ø, 2.5 FLA	DISCONNECT BY EC
HVLS-3	HVLS FAN	480V, 3Ø, 2.5 FLA	DISCONNECT BY EC
DWH-1	ELECTRIC WATER HEATER	480V, 3Ø, 7.2 FLA	DISCONNECT BY EC

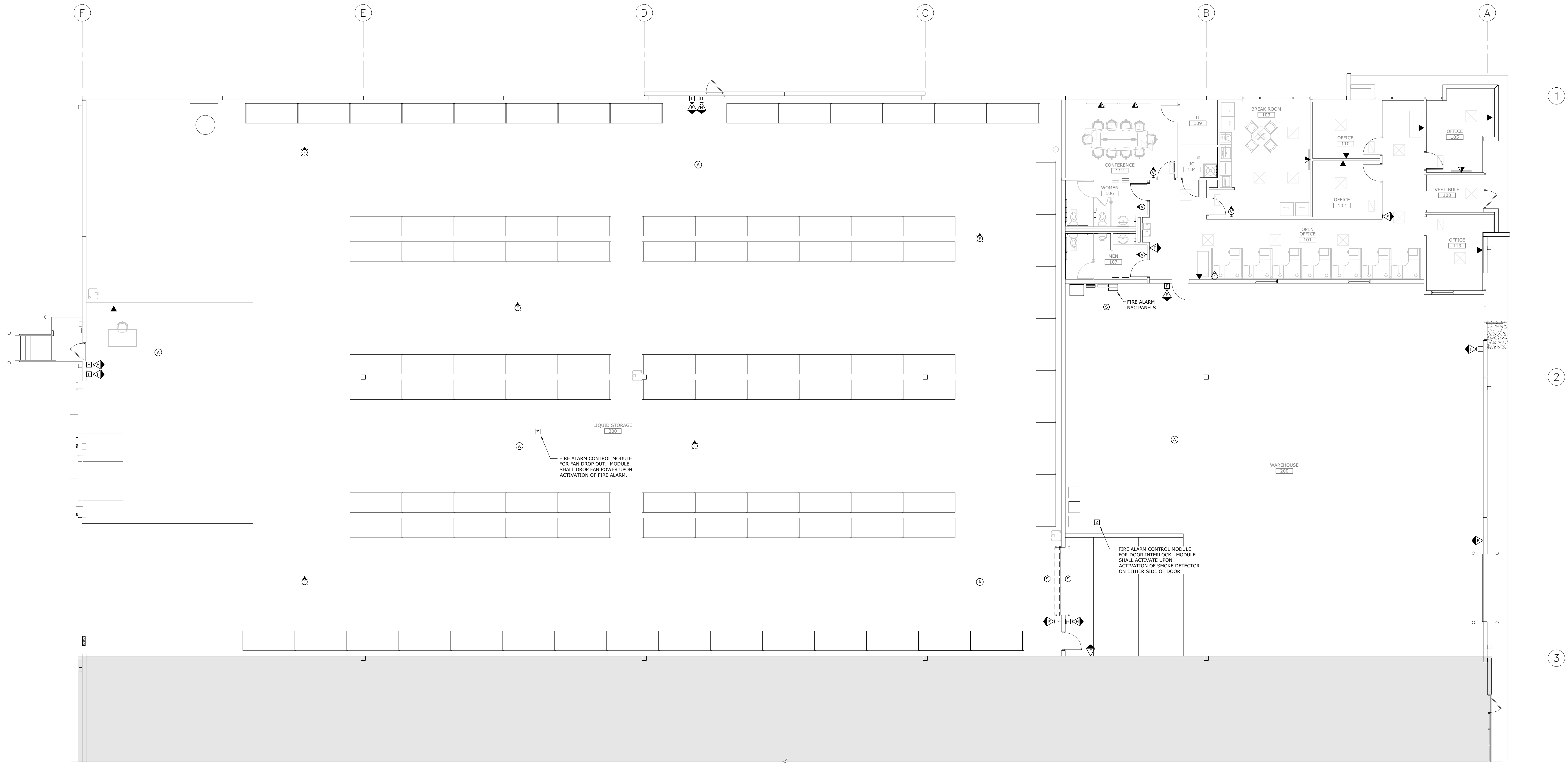


EQUIPMENT WIRING PLAN



ARCH E1 (10.00 X 42.00 INCHES) 186-25-25 - Adam Sperry - 2025-08-18 11:40

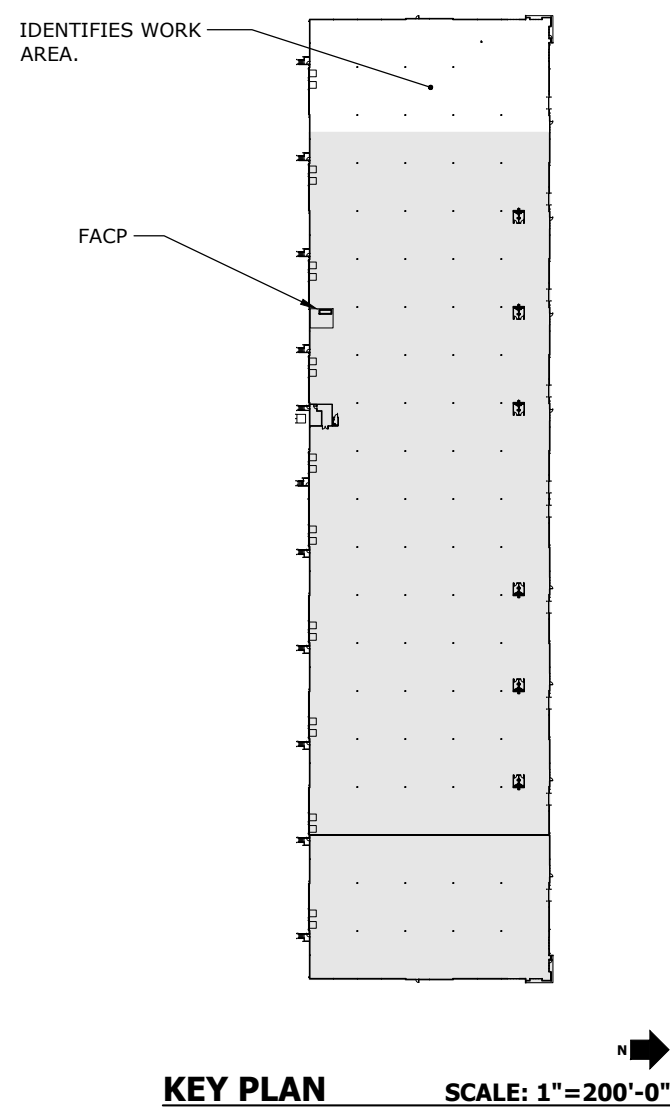
SYSTEMS WIRING PLAN



FIRE ALARM RISER DIAGRAM

NO SCALE

- NOTES:**
1. REFER TO SYMBOLS AND SPECIFICATIONS FOR EQUIPMENT DESCRIPTION.
 2. EC SHALL VERIFY EXISTING FIRE ALARM SYSTEM IN FIELD. VERIFY DEVICE PART NUMBERS AND CABLE TYPE WITH FIRE ALARM MANUFACTURER PRIOR TO ORDERING.
 3. DEVICES INSTALLED IN FIRE RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH IBC ARTICLE 714.4.2. COORDINATE WALL TYPES WITH THE ARCHITECTURAL DRAWINGS.
 4. FIRE ALARM SYSTEM PLAN IS A DEFERRED SUBMITTAL. FIRE ALARM VENDOR SHALL HAVE SUBMITTAL DRAWINGS THAT INCLUDE LOAD CALCULATIONS AND POINT TO POINT CABLING APPROVED BY BUILDING DEPARTMENT PRIOR TO INSTALLATION.
 5. REFER TO DRAWING E2.01 FOR ELECTRICAL FIXTURE & SYMBOLS SCHEDULES.
 6. UNLESS NOTED OTHERWISE, PLAN SHADING THIS DRAWING IDENTIFIES AREAS IN WHICH SUSPENDED GRID CEILINGS, LIGHT FIXTURES, WALLS, WALL MOUNTED DEVICES, AND CARPETING/TILING SHALL REMAIN AND BE MAINTAINED.
 7. ELECTRICAL CLASSIFICATION AND FIRE CODE REQUIREMENTS FOR THE WAREHOUSE/STORAGE AREAS ARE BASED ON THE "FIRE PROTECTION AND LIFE SAFETY ANALYSIS REPORT" PROVIDED BY ARCHITECT/OWNER'S FIRE PROTECTION PROFESSIONAL ENGINEERING CONSULTANT.



TENANT IMPROVEMENTS FOR:
SONNY'S
2201 NE TOWN CENTRE BOULEVARD
LEE'S SUMMIT, MISSOURI 64064

MARK: ISSUE: DATE:
ISSUED 08/15/2025

PROJECT #: 016-0402

DRAWN BY: PTA INC CHECKED BY: J.J.J.

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DRAWING TITLE:
SYSTEMS WIRING
PLAN

SHEET #:
E1.04

RELEASED FOR
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
08/15/2025

STATE OF MISSOURI
JONATHAN J. JENNINGS
NUMBER
PE-2023000149
08-15-25

SEAL

FOUNDATION
ARCHITECTURE LLC
14100 S. HIGHWAY 100 - SUITE A, UNIVERSITY CITY, MO 64113

pta
engineering
275 Springside Dr., Suite 300
Akron, Ohio 44333
Phone: 330-666-3702
ptaengineering.com

PROJECT:

ELECTRICAL SPECIFICATIONS

- GENERAL PROVISIONS
 - A. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, SUPPLIES, SERVICES, AND SHALL PERFORM ALL OPERATIONS INCLUDING SETTING OF SLEEVES, CUTTING, CHANNELING, AND CHASING NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK ON THIS PROJECT, COMPLETE IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS AND APPLICABLE DRAWINGS, AND READY FOR USE. THIS WORK INCLUDES ALL ELECTRICAL WORK FROM THE POINT OF SERVICE CONNECTION OR CONNECTIONS TO AND INCLUDING OUTLETS, WIRING DEVICES, LIGHTING FIXTURES, MOTOR TERMINALS, ETC.
 - (1) THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL, AND REMOVE TEMPORARY LIGHTING AND POWER SERVICES AS REQUIRED FOR THE COMPLETION OF THE PROJECT.
 - B. THIS CONTRACTOR IS INSTRUCTED TO READ CAREFULLY THE SPECIFICATIONS FOR ALL PARTS OF THE WORK, ESPECIALLY THE MECHANICAL TRADES OF THE CONTRACT AND INCLUDE COSTS FOR WIRING ALL THEIR EQUIPMENT UNLESS SPECIFICALLY EXCEPTED HEREIN.
 - C. ALL TYPES OF LABOR, PLANS, AND EQUIPMENT NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON PLANS, BUT INCIDENTAL TO, OR REQUIRED FOR THE COMPLETE INSTALLATION AND PROPER OPERATION OF THE WORK, SHALL BE FURNISHED AS IF CALLED FOR IN DETAIL BY THE SPECIFICATIONS OR DRAWINGS.
 - PERMITS, CODES, INSPECTIONS, AND TESTS
 - A. THE ELECTRICAL CONTRACTOR (EC) SHALL SECURE AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED FOR THE PROSECUTION OF ELECTRICAL WORK. ALL PERMITS AND CERTIFICATES OF INSPECTION AND APPROVAL SIGNED BY THE CONTROLLING BUILDING DEPARTMENT SHALL BECOME PROPERTY OF THE OWNER.
 - B. ALL WIRING SHALL BE IN COMPLIANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE, APPLICABLE STATE AND CITY REGULATIONS, AND OSHA. IN CASES OF CONFLICT BETWEEN CODE AND SPECIFICATIONS, THE MORE RESTRICTIVE REQUIREMENTS SHALL GOVERN.
 - C. FOLLOWING COMPLETION OF THE ELECTRICAL WORK, FURNISH TO THE OWNER, IN DUPLICATE, CERTIFICATES OF INSPECTION AND APPROVAL BY REGULATORY AGENCIES HAVING JURISDICTION.
 - (1) ARRANGE FOR INSPECTION CERTIFICATION PRIOR TO SUBMITTING FINAL REQUEST FOR PAYMENT. PAY ALL FEES IN CONNECTION WITH SUCH INSPECTIONS.
 - (2) IMMEDIATELY CORRECT ANY WORK FOUND AT VARIANCE WITH THESE SPECIFICATIONS, THE NATIONAL ELECTRICAL CODE, OR REQUIREMENTS OF GOVERNING REGULATORY AGENCIES.
 - (3) DEMONSTRATE, BY TEST, THAT ANY WORK COMPLIES WITH THE STATED STANDARDS. TESTS WILL INCLUDE: OPERATION OF LIGHTS AND EQUIPMENT, CONTINUITY OF CONDUIT SYSTEM, GROUNDING RESISTANCES AND INSULATION RESISTANCES ON NOT MORE THAN 10 REPRESENTATIVE CIRCUITS AND ANY OTHER CIRCUITS JUSTIFYING SUCH TESTING, AND ANY OTHER TESTING IDENTIFIED IN THIS SPECIFICATION. LABOR AND EQUIPMENT FOR PERFORMING TESTS SHALL BE SUPPLIED AS PART OF THE WORK UNDER THIS DIVISION.
 - VISIT TO THE SITE
 - A. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE WORK. THE SUBMISSION OF A PROPOSAL SHALL PRESUPPOSE KNOWLEDGE OF ALL SUCH CONDITIONS.
 - PROTECTION
 - A. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FROM DIRT AND WATER DURING CONSTRUCTION NECESSITATED BY ELECTRICAL WORK. PROTECTION METHODS ARE SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER AND/OR THE ARCHITECT.
 - EQUIPMENT AND EQUIPMENT IDENTIFICATION
 - A. ALL EQUIPMENT AND DEVICES SHALL BE NEW AND SHALL CONFORM TO NEMA AND UNDERWRITERS' LABORATORIES STANDARDS. WHERE SPECIFICATIONS DESCRIBE, OR PLANS SHOW, MATERIALS OR EQUIPMENT OF HIGHER QUALITY THAN REQUIRED BY CODE AND LOCAL RULING, THE DRAWINGS AND SPECIFICATIONS SHALL GOVERN THE QUALITY OF THE MATERIAL OR EQUIPMENT.
 - B. THE CONTRACTOR SHALL SUBMIT PROF. IF REQUESTED BY THE OWNER, THAT THE MATERIALS, APPLIANCES, EQUIPMENT OR DEVICES THAT ARE FURNISHED AND INSTALLED UNDER THIS CONTRACT MEET THE REQUIREMENTS OF THE UNDERWRITERS' LABORATORIES, INC., AS REGARDING FIRE AND CASUALTY HAZARD. THE LABEL OF OR LISTING BY THE UNDERWRITERS' LABORATORIES, INC. WILL BE ACCEPTED AS CONFORMING WITH THIS REQUIREMENT. IN LIEU OF THE LABEL OR LISTING, THE CONTRACTOR SHALL SUBMIT INDEPENDENT PROF SATISFACTORY TO THE ENGINEER THAT THE MATERIALS, APPLIANCES OR DEVICES CONFORM TO THE UNDERWRITERS' LABORATORY TESTING METHODS. UNDERWRITERS' LABORATORIES, INC. AND ITS PUBLICATIONS WILL BE REFERRED TO HEREINAFTER BY THE ABBREVIATION UL, WITH OR WITHOUT ADDITIONAL IDENTIFYING SYMBOLS.
 - C. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A SYSTEM OF NAMEPLATES DESIGNED TO IDENTIFY EACH TYPE OF ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO: CIRCUIT BREAKERS AND FUSED SWITCHES WITHIN SWITCHBOARDS AND DISTRIBUTION PANELBOARDS, BRANCH CIRCUIT PANELBOARDS, MOTOR CONTROL CENTERS, CONTROL PANELS, TRANSFORMERS, CIRCUIT BREAKERS, DISCONNECT SWITCHES, MOTOR STARTERS, COMBINATION MOTOR STARTERS, VARIABLE FREQUENCY DRIVES, AND CONTACTORS. NAMEPLATES SHALL ALSO BE PROVIDED BY THE ELECTRICAL CONTRACTOR FOR MECHANICAL EQUIPMENT UNLESS THE EQUIPMENT IS LOCATED ADJACENT TO A NAMEPLATED LOCAL DISCONNECT AND THE EQUIPMENT IDENTIFICATION IS READILY APPARENT.
 - (1) NAMEPLATES SHALL BE ENGRAVED NICARATA BLACK WITH WHITE LETTERS FOR NORMAL POWER SOURCE AND ADJ WITH WHITE LETTERS FOR EMERGENCY POWER SOURCE, UNLESS NOTED OTHERWISE ON THE DRAWINGS. NAMEPLATES SHALL BE ADHERED TO A CLEAN PLAT SURFACE OR MECHANICALLY FASTENED TO THE EQUIPMENT. NAMEPLATES SHALL NOT ACCEPT ADHESIVE LABELS.
 - (2) SWITCHBOARD, DISTRIBUTION PANELBOARD, BRANCH CIRCUIT PANELBOARD, AND MOTOR CONTROL CENTER NAMEPLATES SHALL IDENTIFY PANEL, DESIGNATION, VOLTAGE, AND DESIGNATION OF UPSTREAM SOURCE:
 - (a) LINE 1: "PANEL 1-24"
 - (b) LINE 2: "208/120V, 3Ø, 4 WIRE"
 - (c) LINE 3: "FEED FROM SWITCHBOARD 50P-24"
 - D. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL IDENTIFYING LABELS, WHERE NECESSARY AS OR DIRECTED BY THE OWNER, FOR ALL DISTRIBUTIONS, SELECTOR SWITCHES, KEY SWITCHES, TOGGLE SWITCHES, MANUAL MOTOR STARTERS, RECEPTACLES, SPECIAL OUTLETS, ETC.
 - (1) LABELS SHALL BE SELF LAMINATING WHITE WITH BLACK LETTERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS, AND SHALL BE ADHERED TO A CLEAN PLAT SURFACE.
 - GUARANTEE
 - A. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR (FROM THE DATE OF OWNER ACCEPTANCE) THAT ALL WORK AND EQUIPMENT WILL REMAIN FREE FROM DEFECTS AND DEFICIENCIES FOR THE PERIOD OF ONE YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF THE SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS GOVERNING THE WORK.
 - B. ALL WORK FOUND BY THE ENGINEER TO BE DEFECTIVE WILL BE REPLACED WITH NEW WORK MEETING ALL THE REQUIREMENTS OF THE CONTRACT. THE ELECTRIC CONTRACTOR SHALL FURNISH AND INSTALL NEW WORK, AND SHALL ASSUME ALL COSTS FOR REPLACING OTHER WORK DAMAGED BY THE REMOVAL AND REPLACEMENT OF ANY OF THE WORK. THE ELECTRICAL CONTRACTOR WILL BEAR ALL COSTS FOR FREIGHT, DAMAGE AND DEMOLITION, AND ALL LABOR IN CONNECTION THEREWITH.
 - CUTTING, PATCHING, FIRESTOPPING, CLEANING, AND PAINTING
 - A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING ALL HOLES REQUIRED FOR INSTALLATION OF ELECTRICAL WORK. HOLES SHALL BE CUT IN A NEAT MANNER SATISFACTORY TO THE ENGINEER.
 - B. THE LOCATION OF ALL CONDUIT AND BOXES SHALL BE PREDETERMINED BY THIS CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THE INSTALLATION OF SAME IN WALLS AND CEILINGS.
 - C. ALL HOLES OR DAMAGE CAUSED BY THE REMOVAL OF EXISTING WORK OR THE INSTALLATION OF NEW WORK SHALL BE PROPERLY PATCHED BY THIS CONTRACTOR. HOLES SHALL BE NEATLY PATCHED WITH SUITABLE MATERIAL TO MATCH EXISTING SURFACES. HOLES THROUGH FLOORS OR FIRE WALLS SHALL BE PATCHED WITH THE APPROPRIATE TYPE OF CONCRETE, OR SHOT BLOCK, BLOCK, OR SHOT BLOCK. PATCHES SHALL BE IDENTIFIED BY THE CONTRACTOR WITH "FLAMELESS" SPECIFIED TECHNOLOGIES INC. "SPEC SEAL", INTERNATIONAL PROTECTIVE COATINGS "FLAMESEAL", SDC SEALING SYSTEMS, OR APPROVED EQUIV. AS MANUFACTURED BY SDC.
 - D. FIRESTOPPING MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH ALL U.L. SYSTEM REQUIREMENTS FOR THE TYPE OF PENETRATION AND FIRESTOPPING SYSTEM USED. FIRESTOPPING MATERIALS SHALL BE ILTDC IN, OR APPROVED EQUIV. INSTALLATION SHALL BE IN ACCORDANCE WITH THE LISTING FOR THE FURNISHED MANUFACTURER AND MANUFACTURING COMPANY.
 - (1) "F" RATINGS - 1 OR 2 HOURS
 - (a) METAL PIPE THROUGH GYPSUM BOARD - ILTDC #W-1-1054
 - (b) METAL PIPE THROUGH WOOD FLOOR/CELING ASSEMBLY - ILTDC #F-C-1059
 - (c) PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY - ILTDC #F-W-2251
 - (d) PLASTIC PIPE THROUGH WOOD FLOOR/CEILING ASSEMBLY - ILTDC #F-C-1217
 - (e) CABLE THROUGH GYPSUM BOARD - ILTDC #W-1-3065
 - (f) CABLE/CABLE BUNDLE THROUGH WOOD FLOOR/CELING ASSEMBLY - ILTDC #F-C-3012
 - (2) CABLE TRAY THROUGH GYPSUM BOARD - ILTDC #W-1-4011, #W-1-4011-1
 - (3) CABLE TRAY THROUGH GYPSUM WALL ASSEMBLY - ILTDC #W-1-4011
 - (2) "F" RATINGS - 3 HOURS
 - (a) METAL PIPE THROUGH MASONRY/CONCRETE FLOOR OR WALL - ILTDC #F-C-41-1155, #F-C-41-1226
 - (b) METAL PIPE THROUGH POURED CONCRETE FLOOR SLABS - ILTDC #F-1-1017
 - (c) PLASTIC PIPE THROUGH MASONRY/CONCRETE FLOOR OR WALL - ILTDC #F-C-2109
 - (d) CABLE THROUGH MASONRY/CONCRETE FLOOR OR WALLS - ILTDC #F-C-3095
 - (e) CABLE THROUGH POURED CONCRETE FLOOR SLABS - ILTDC #F-W-3007
 - (f) CABLE TRAY THROUGH MASONRY/CONCRETE FLOOR OR WALL - ILTDC #F-C-4035
 - (g) MULTIPLE CABLE TRAYS THROUGH MASONRY/CONCRETE FLOOR OR WALL - ILTDC #F-C-4017
 - E. SWAB INTERIORS OF CONDUITS CLEAN AND DRY BEFORE PULLING WIRE. CLEAN INTERIORS OF BOXES AND CABINETS BEFORE INSTALLING TRIMS AND COVERS.
 - F. ALL PAINTING REQUIRED BY ELECTRICAL DEMOLITION OR BY THE INSTALLATION OF NEW ELECTRICAL CONDUIT AND EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
 - G. ALL RACEWAYS, JUNCTION BOXES, OUTLET BOXES, RACEWAY SUPPORTS, ETC. INSTALLED EXPOSED ON THE SURFACE OF EXISTING PAINTED SURFACES SHALL BE PAINTED (2 COATS MINIMUM) BY THE ELECTRICAL CONTRACTOR TO MATCH EXISTING SURFACES.
 - H. WALLS INSTALLED ON UNPAINTED SURFACES SHALL NOT BE PAINTED.
 - I. COLOR COLORED WIREMOLD RACEWAYS AND WIREMOLD OUTLET BOXES SURFACE MOUNTED ON IVORY OR WHITE PAINTED SURFACES SHALL NOT BE PAINTED.
 - (3) SUBMIT PANEL CHIPS TO THE ARCHITECT FOR APPROVAL PRIOR TO THE PURCHASE OF ANY PAINT.
- H. THE ELECTRICAL CONTRACTOR SHALL PATCH AND FINISH SAND ALL EXISTING SURFACES MARKED BY THE REMOVAL OF EXISTING CONDUITS, CABLE, AND EQUIPMENT. WHERE PATCHES ARE EXPOSED ON EXISTING PAINTED SURFACES, THEY SHALL BE PAINTED (2 COATS MINIMUM) BY THE ELECTRICAL CONTRACTOR TO MATCH EXISTING SURFACES.
- I. TOUCH UP AND REPAIR ANY DAMAGED FACTORY FINISHES ON EQUIPMENT AND MATERIALS FURNISHED. REMOVE ANY RUST SPOTS, PRIME WITH RUST INHIBITIVE PAINT ANY METAL SURFACES OF ELECTRICAL DEVICES NOT PROVIDED WITH RUST INHIBITIVE COATING, THEN APPLY PAINT (2 COATS MINIMUM) TO MATCH FACTORY FINISH.
- COORDINATION AND CONDUIT OF WORK
 - A. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT, APPROXIMATE SIZES, GENERAL LOCATIONS OF EQUIPMENT AND OUTLETS. VERIFY DIMENSIONS IN FIELD, ADJUST TO MANUFACTURERS' SHOP DRAWINGS.
 - B. ARCHITECTURAL AND STRUCTURAL DRAWINGS SUPERSEDE ELECTRICAL DRAWINGS. DETERMINE THAT WORK OF THIS DIVISION CAN BE ACCOMMODATED WITH SPACES PROVIDED. NOTIFY ARCHITECT OF ANY INTERFERENCES BEFORE STARTING INSTALLATION.
 - C. DETERMINE SIZES, LOCATIONS FOR CHASES, AND OPENINGS NECESSARY FOR INSTALLATION OF ELECTRICAL WORK. COOPERATE WITH OTHER TRADES IN SETTING SLEEVES, INSERTS, AND HANGERS.
 - D. COORDINATE THIS WORK WITH ALL TRADES. ARRANGE OPERATIONS SO AS NOT TO DELAY INSTALLATION OR COMPLETION OF ANY PARTS OF INTERRELATED WORK SO THAT CONSTRUCTION MAY PROCEED ON SCHEDULE. ARRANGE WORK AND SCHEDULE CONTINUOUS WORK SUFFICIENT TO PROVIDE MAXIMUM POSSIBLE OUTAGE OF ELECTRIC SERVICE.
 - E. COOPERATE WITH MECHANICAL TRADES IN PREPARING INTERSECTION DRAWINGS FOR POINTS WHERE THERE IS POSSIBLE CONFLICT BETWEEN TRADES. EXACT LOCATION OF PIPES, DUCTS, AND CONDUITS BASED ON FIELD MEASUREMENTS WITH FINAL ARRANGEMENT DETERMINED BY INTRA-TRADE AGREEMENTS ARE SUBJECT TO APPROVAL BY THE ARCHITECT.
 - F. DRAWINGS OTHER THAN ELECTRICAL DRAWINGS AND OTHER SECTIONS OF THIS SPECIFICATION MAY SHOW OR SPECIFY ELECTRICALLY OPERATED EQUIPMENT, WIRING DIAGRAMS, ETC. THE CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATION SECTIONS TO BECOME FAMILIAR WITH THE CHARACTERISTICS OF AND REQUIRED CONNECTIONS FOR ALL EQUIPMENT FOR WHICH WIRING IS TO BE PROVIDED.
 - G. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER BY FIRST-CLASS MECHANICS. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND COMPETENT SUPERVISION THROUGHOUT CONSTRUCTION.
 - H. CONDUITS, WIRING, AND EQUIPMENT SHALL BE ARRANGED SUBSTANTIALLY AS INDICATED. ANY CHANGE RESULTING IN A SAVINGS IN LABOR OR MATERIAL SHALL BE MADE ONLY IN ACCORDANCE WITH A CONTRACT CHANGE ORDER. DEVIATIONS SHALL BE MADE ONLY WHERE NECESSARY TO AVOID INTERFERENCES AND ONLY AFTER DRAWINGS SHOWING THE PROPOSED DEVIATIONS HAVE BEEN SUBMITTED TO AND APPROVED BY THE ARCHITECT.
 - I. CONSTRUCTION MANAGER AND ARCHITECT RESERVE THE RIGHT TO MAKE REASONABLE CHANGES IN INDICATED LOCATIONS WITHOUT ADDITIONAL COST TO THE OWNER.
- REMOVAL AND REARRANGEMENT OF EXISTING WIRING AND ELECTRICAL EQUIPMENT
 - A. REMOVE ALL EXISTING WIRING AND ELECTRICAL DEVICES THAT INTERFERE WITH NEW CONSTRUCTION AND ARE NOT NECESSARY TO MAINTAIN SERVICE TO LOADS THAT ARE TO REMAIN.
 - B. RELOCATE, AND/OR EXTEND AS REQUIRED, WIRING THAT INTERFERES WITH NEW CONSTRUCTION AND IS ESSENTIAL TO MAINTAIN SERVICE TO LOADS THAT ARE TO REMAIN.
 - C. REMOVE AND/OR RELOCATE THOSE DEVICES SPECIFICALLY INDICATED ON THE DRAWINGS.
 - D. IN THOSE CASES WHERE DEVICES ARE REMOVED, THE ASSOCIATED WIRING THAT WILL NO LONGER BE ACTIVE SHALL BE REMOVED FULL LENGTH BACK TO THE SOURCE OR FIRST ACTIVE JUNCTION POINT.
 - E. PROVIDE NEW UPDATED TYPED CIRCUIT DIRECTORIES FOR ALL PANELS EFFECTED BY DEMOLITION WORK.
 - F. CONDUITS TO BE ABANDONED THAT PENETRATE ON GRADE FLOOR SLABS SHALL BE CUT FLUSH WITH SLAB, FILLED TO REMOVE ALL BURRS, AND GROUTED TO MATCH SLAB.
 - G. ELECTRICAL CONTRACTOR SHALL SAFELY DISPOSE OF ALL FLORESCENT AND HID BALLASTS AND LAMPS IN FULL COMPLIANCE WITH ALL FEDERAL AND STATE EPA REGULATIONS. ELECTRICAL CONTRACTOR SHALL, UNDER THE BASE BID PROPOSAL, PACKAGE AND DISPOSE OR RECYCLE ALL LAMPS AND BALLASTS REMOVED UNDER THE DEMOLITION PORTION OF THIS CONTRACT.
 - (1) DISPOSAL SHALL BE DONE AT AN EPA APPROVED HAZARDOUS WASTE FACILITY.
 - (2) RECYCLING SHALL BE DONE BY AN EPA APPROVED RECYCLE FACILITY.
 - (3) ELECTRICAL CONTRACTOR SHALL PROVIDE BOTH OWNER AND ARCHITECT WITH COPIES OF ALL LAMP AND BALLAST DISPOSAL/RECYCLE DOCUMENTATION IN ACCORDANCE WITH U.S. EPA AND STATE EPA REGULATIONS.
- H. ALL ELECTRICAL MATERIALS AND DEVICES THAT ARE REMOVED SHALL BE STORED ON THE SITE FOR SALVAGE BY THE OWNER. ALL ITEMS NOT SELECTED FOR SALVAGE SHALL BECOME THE PROPERTY OF THE ELECTRICAL CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE SITE.
- SUBMITTALS
 - A. THIS CONTRACTOR SHALL PREPARE OR OBTAIN FROM THE MANUFACTURERS SHOP DRAWINGS OF THE ITEMS LISTED ABOVE AFTER REVIEW AND STAMPING SHALL SUBMIT ELECTRONICALLY FOR REVIEW.
 - B. ELECTRONIC SUBMITTALS SHALL BE IN PDF FORMAT. SUBMITTALS SHALL INCLUDE A TRANSMITTAL, LISTED A CONTRACTOR REVIEW STAMP THAT INDICATES APPROVAL BY THE CONTRACTOR, SHALL CLEARLY IDENTIFY EACH ITEM TO BE REVIEWED WITH SPECIFIC NOTES IDENTIFYING ANY DEVIATION FROM THE CONTRACT DOCUMENTS, AND BE SIGNED BY A SINGLE INDIVIDUAL NAMED TO MATCH CONTENTS.
 - C. THESE DRAWINGS SHALL BE COMPLETE IN EVERY RESPECT, SHOWING PERTINENT DETAILS OF SIZE, CAPACITIES, ACCESSORIES, TYPE AND THICKNESS OF MATERIALS, WEIGHT, MAINTENANCE, FEATURES, ETC. ALL LIGHTING FIXTURES SHALL BE SUBMITTED AT ONE TIME.
 - (1) LIGHTING FIXTURES
 - (2) WIRING DEVICES
 - (3) PANELBOARDS
 - (4) TRANSFORMERS
 - (5) DISCONNECT SWITCHES
 - (6) FLOOR BOXES
 - (7) OCCUPANCY SENSORS & LIGHTING CONTROLS
 - (8) FIRE ALARM SYSTEM
- OPERATION AND MAINTENANCE MANUALS
 - A. ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER OPERATION/MAINTENANCE MANUALS AS DESCRIBED IN THE DIVISION 1 SPECIFICATIONS.
 - B. MANUALS SHALL MEET OR EXCEED ALL DIVISION 1 SPECIFICATION REQUIREMENTS AND SHALL MINIMALLY INCLUDE THREE (3) INDIVIDUALLY BOUND AND INDEXED (THUMB TABBED) MANUALS. EACH MANUAL SHALL PROVIDE OPERATING INSTRUCTIONS, MAINTENANCE MANUALS, PARTS PARTS LISTING, COPIES OF WARRANTIES, WIRING DIAGRAMS, AND SHOP DRAWINGS ON ALL EQUIPMENT AND SYSTEMS.
 - C. UNLESS OTHERWISE DIRECTED BY THE DIVISION 1 SPECIFICATION EACH MANUAL SHALL BE BOUND IN A HEAVY-DUTY, 3 INCH, THREE-RING-WIRE, COVERED BINDER WITH POCKET FOLDERS FOR DRAWINGS AND FOLDED SHEET INFORMATION. EACH BINDER SHALL BE IDENTIFIED ON BOTH THE FRONT AND THE SPINE.
- AS-BUILT DRAWINGS
 - A. THE CONTRACTOR SHALL PROGRESS, RECORD AND SET OF RED-LINED "AS-BUILT" PRINTS ANY DEVIATIONS FROM DESIGN DRAWINGS. DELIVER TO THE OWNER AND ENGINEER IN ELECTRONIC FORMAT AUTOCAD (.DWG) OR ADOBE ACROBAT (.PDF) BEFORE SUBMITTING THE REQUEST FOR FINAL PAYMENT.
- BRANCH CIRCUIT PANELBOARDS
 - A. BRANCH CIRCUIT PANELBOARDS SHALL BE DEAD FRONT TYPE AND SURFACE OR FLUSH MOUNTED AS SPECIFIED ON THE DRAWINGS. THE FRAMEWORK IS TO BE OF CAST ALUMINUM, RIGIDLY WELDED AND BOLTED TOGETHER TO SUPPORT ALL COVER PLATES, BUSBARS, AND COMPONENT DEVICES DURING SHIPMENT AND INSTALLATION.
 - (1) FRONT TRIM SHALL CONSIST OF A SCREW REMOVABLE NON-VENTILATED HINGED COVER WITH HINGED DOOR, CONCEALED DOOR HINGES, FLUSH RECTANGULAR DOOR LOCK, ADHESIVE PANELBOARD DIRECTORY SLEEVE, AND TWO (2) STANDARD MANUFACTURERS KEYS.
 - (2) FRONT TRIM SHALL BE FLUSH WITH PANELBOARD TUB FOR SURFACE MOUNTED PANELBOARDS AND EXTEND 1/8" BEYOND PANELBOARD TUB, ON ALL SIDES, FOR FLUSH MOUNTED PANELBOARDS.
 - (3) EXTERIOR AND INTERIOR METAL SURFACES OF THE PANELBOARD SHALL BE FINISHED WITH BAKED ENAMEL OVER AN IRON PHOSPHATE PRE-TREATMENT. THE ENAMEL FINISH SHALL BE FLUSH WITH PANELBOARD TUB FOR SURFACE MOUNTED PANELBOARDS AND EXTEND 1/8" BEYOND PANELBOARD TUB, ON ALL SIDES, FOR FLUSH MOUNTED PANELBOARDS.
 - B. BRANCH CIRCUIT PANELBOARDS SHALL BE ARRANGED FOR 480/277 VOLT, THREE-PHASE, FOUR-WIRE OR 208/120 VOLT, THREE-PHASE, FOUR-WIRE AS SHOWN ON THE DRAWINGS.
 - C. PANELBOARDS SHALL BE SEQUENCED BUSSED, I.E., CIRCUITS 1 AND 2 TO PHASE "A", 3 AND 4 TO PHASE "B", 5 AND 6 TO PHASE "C", ETC., TO CONFORM TO THE BRANCH CIRCUIT NUMBERING SYSTEM SHOWN ON THE PLANS.
 - D. PHASE AND NEUTRAL BUSES SHALL BE TIN OR SILVER PLATED ALUMINUM OR COPPER, OF THE CURRENT RATINGS INDICATED ON THE DRAWINGS, AND SIZED FOR 65°C TEMPERATURE RISE ABOVE 40°C AMBIENT.
 - E. EACH PANELBOARD SHALL CONTAIN A COPPER EQUIPMENT GROUND BUS, BOLDED TO THE INSIDE OF THE ENCLOSURE, TO ACCEPT ALL OUTGOING EQUIPMENT GROUND CONDUCTORS.
 - F. MAIN BUSES, GROUND BUS, AND THRU FEED BUS SHALL HAVE LUGS TO ACCOMMODATE INCOMING FEEDERS AND GROUNDS AS SHOWN ON THE DRAWINGS.
 - G. CIRCUIT BREAKERS SHALL BE OF THE SWITCH RATED BOLT-ON TYPE WITH QUANTITY, SIZE, AND MINIMUM INTERRUPTING CAPACITY AS NOTED ON DRAWINGS.
 - (1) ARRANGE CIRCUIT BREAKERS PER THE PANELBOARD SCHEDULES ON THE DRAWINGS.
 - (2) MAIN BREAKERS, WHERE SPECIFIED, SHALL BE LOCATED AT THE TOP OR BOTTOM OF THE PANEL. BACK-FEED BRANCH MOUNTED BREAKERS SHALL NOT BE USED AS MAIN BREAKERS.
 - (3) SINGLE-POLE BREAKERS SHALL BE FACTORY MOUNTED AT THE TOP OF THE PANELBOARD ASSEMBLY, UNLESS NOTED OTHERWISE.
 - (4) TWO-POLE AND THREE-POLE BREAKERS SHALL BE FACTORY MOUNTED AT THE BOTTOM OF THE PANELBOARD ASSEMBLY, BELOW ALL SINGLE-POLE BREAKERS, PROVISIONS, AND SPACES, UNLESS NOTED OTHERWISE.
 - H. PANELBOARDS SHALL BE FLUSH MOUNTED WITH AN ENGRAVED NAMEPLATE INSTALLED ON THE FRONT TRIM. REFER TO EQUIPMENT AND EQUIPMENT IDENTIFICATION SPECIFICATION SECTION FOR REQUIREMENTS.
 - I. PANELBOARD CIRCUITS SHALL BE NUMBERED SEQUENTIALLY WITH ADHESIVE FACTORY LABELS. WHERE PANELBOARDS ARE TWO OR MORE SECTIONS, THE NUMBERING SEQUENCE SHALL BE CONTINUOUS THROUGHOUT THE PANELBOARD.
 - (1) MAIN BREAKERS SHALL BE NUMBERED 1 THRU 42, SECTION 2 NUMBERED 43 THRU 84, ETC.
 - J. FURNISH AND INSTALL AN ARC FLASH WARNING LABEL IN A CLEARLY VISIBLE LOCATION INSIDE THE HINGED PANEL COVER OF EACH BRANCH CIRCUIT PANELBOARD TO COMPLY WITH NEC 110.16. LABELS SHALL BE BRADY IDENTIFICATION SOLUTIONS (1-800-537-8791), CAT. NO. 94913, 3.5" X 5", OR EQUIV. FOR COMPATIBILITY.
 - K. WIREWAYS SHALL NOT BE INSTALLED ABOVE BRANCH CIRCUIT PANELBOARDS. (RACEWAYS SHALL TERMINATE DIRECTLY INTO PANELBOARD TUB).
 - L. 208/120V (480/277V) BRANCH PANELBOARDS SHALL BE ABNVE/ "QA/QAE/AE" SERIES, Eaton "PWR-IN-1A(2A)", SIEMENS "PL1/P2/P3" SERIES, OR SQUARE D "400" GENERAL.
 - (1) ABN/ "GENERAL" ELECTRIC HINGED FRONT TRIMS SHALL BE "FRONT HINGED TO BOX SERIES".
 - (2) EATON HINGED FRONT TRIMS SHALL BE "DOOR IN DOOR LUGS SERIES".
 - (3) E2-TIM IS ACCEPTABLE ONLY FOR SURFACE MOUNTED PANELS.
 - (4) SIEMENS HINGED FRONT TRIMS SHALL BE "HINGED TO BOX SERIES".
 - (5) SQUARE D HINGED FRONT TRIMS SHALL BE "HINGED FRONT NCHR SERIES".
 - M. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.
- DRY TYPE TRANSFORMERS
 - A. DRY TYPE TRANSFORMERS SHALL HAVE KVA AND VOLTAGE RATINGS PER THE DRAWINGS, 150 DEGREE CELSIUS TEMPERATURE RISE, SIX (6) 1-1/2" PRIMARY TAPS (2 ABOVE, 4 BELOW RATED NOMINAL), AND A NEMA 1 INDUCTION VENTILATED ENCLOSURE.
 - B. WHERE ENCAPSULATED TRANSFORMERS ARE SPECIFIED ON THE DRAWINGS, THEY SHALL HAVE 115 DEGREE CELSIUS TEMPERATURE RISE, FOUR (4) 2-1/2" PRIMARY TAPS (2 ABOVE, 2 BELOW RATED NOMINAL), AND A NEMA 3R OUTDOOR NON-VENTILATED ENCLOSURE.
 - C. TRANSFORMERS MUST BE LISTED TO THE UL FILED EFFICIENCY LEVELS OF THE UNITED STATES DEPARTMENT OF ENERGY CONSTRUCTION STANDARDS. ENCAPSULATED TRANSFORMERS ARE EXEMPT.
 - D. TRANSFORMERS MANUFACTURERS SHALL BE: ABBVIE, ACE ELECTRIC, ATEN, FEDERAL PACIFIC, POWERSMITHS, E-SAVEN 33L, SIEMENS, OR SQUARE D.
 - E. CONNECTIONS TO TRANSFORMERS SHALL UTILIZE A SHORT LENGTH OF FLEXIBLE METAL CONDUIT.
- RACEWAYS
 - A. FURNISH AND INSTALL CONDUIT, SUPPORTS, BOXES, WIRE, AND NECESSARY FITTINGS AND ACCESSORIES AS REQUIRED TO MAKE A COMPLETE INSTALLATION OF THE WIRING SYSTEM INDICATED ON THE DRAWINGS.
 - B. ALL WIRING SHALL BE INSTALLED IN CONDUIT, FLEXIBLE METALLIC CONDUIT, OR LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT AS INDICATED ON PLANS.
 - (1) CONDUITS INSTALLED INDOORS SHALL BE ELECTRICAL METALLIC TUBING GALVANIZED INSIDE AND OUT WITH A CLEAR TOP COAT TO RESIST ABRASION AND AN INTERIOR ORGANIC COATING TO PROVIDE ULTIMATE PROTECTION.
 - (2) CONDUITS INSTALLED EXPOSED OUTDOORS SHALL BE GALVANIZED RIGID TYPE UNLESS NOTED OTHERWISE. EXPANSION JOINTS SHALL BE INCORPORATED INTO THE CONDUIT SYSTEM FOR LONG LENGTHS OF CONDUIT.
 - C. CONDUITS SHALL BE OF THE SIZE INDICATED OR REQUIRED BY THE NATIONAL ELECTRICAL CODE FOR THE NUMBER AND SIZE CONDUCTORS INVOLVED. CONDUITS SHALL BE CUT SQUARE, REAMED SQUARE, AND FINISH UP TO TIGHT. CONDUITS SHALL NOT BE SMALLER THAN 3/4", UNLESS NOTED OTHERWISE.
 - (3) EMT CONDUIT FITTINGS SHALL BE SET SQUARED TYPE GALVANIZED STEEL, CONCRETE TIGHT. DIE CAST TYPE INFERIOR FITTINGS ARE NOT ACCEPTABLE.
 - C. REFER TO THE CONNECTIONS SECTION OF THIS SPECIFICATION FOR LIMITED USE OF MC CABLE.
 - D. RACEWAYS FROM VARIABLE FREQUENCY DRIVES SHALL CONTAIN "VFD RATED" MULTI-CONDUCTOR SHIELDED CABLE AND, WHERE NOT SUBJECT TO PHYSICAL DAMAGE, UP TO 6'-FEET OF VFD CABLE MAY BE ROUTED EXPOSED TO ALLOW CABLE TERMINATION AT MOTORS.
 - E. THROUGH INSULATED BUSBARS SHALL BE USED TO TERMINATE VFD RACEWAYS.
 - (2) INSULATED, NON-ABRASIVE, WEATHER RESISTANT, TRAY CABLE TYPE CABLE GRADS SHALL BE USED TO TRANSITION EXPOSED VFD CABLE TO RACEWAY AND FOR TERMINATING VFD CABLE AT MOTORPOD.
- E. RACEWAYS IN GENERAL SHALL BE INSTALLED CONCEALED ABOVE FINISHED CEILING, IN WALLS, IN ACCESSIBLE FLOOR PLenums, AND EXPOSED ELSEWHERE AS SPECIFIED ON THE DRAWINGS.
 - (1) PVC CONDUIT AND LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT SHALL NOT BE USED IN ENVIRONMENTAL AIR RENUMS.
 - (2) CONDUITS INSTALLED ON EXTERIORS OF BUILDINGS OR OTHER STRUCTURES SHALL BE ARRANGED TO DRAIN (NOT TRAP WATER), AND SHALL BE RAIN-TIGHT IN WET LOCATIONS.
- F. ALL EXPOSED CONDUITS SHALL BE RUN IN A NEAT MANNER, PARALLEL WITH OR AT RIGHT ANGLES TO BUILDING LINES. EXPOSED CONDUITS SHALL BE ADEQUATELY SUPPORTED WITH BRIM CLAMPS, ONE HOLE STRAPS, ETC.
- (3) WHERE ENCOUNTERED, STEEL FIREPROOFING SHALL BE REPAIRED BY THE ELECTRICAL CONTRACTOR WHERE SUPPORTS ARE INSTALLED ON EXISTING STEEL STRUCTURES.
- ELECTRICAL SYSTEMS, RACEWAYS, JUNCTION BOXES, CABLES, AND ALL FLEXIBLE WIRE SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF THE SUSPENDED T-Bar CEILING SYSTEM AND INDEPENDENT OF HANGER WIRES ASSOCIATED WITH THE CEILING SYSTEM, IN FULL COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- B. RACEWAYS THAT ARE INSTALLED EXPOSED TO DIRECT SUNLIGHT ON ROOFTOPS SHALL HAVE 60°F ADDED TO THE OUTDOOR AMBIENT TEMPERATURE USED TO CALCULATE THE CONDUCTOR DERATING FACTOR IN COMPLIANCE WITH NEC ARTICLE 310.15(B).
- CONDUCTORS
 - A. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE STRANDED COPPER WITH NOT LESS THAN 98% CONDUCTIVITY AND 600 VOLT TYPE THWN OR XHHW INSULATION, CONDUCTORS SHALL BE #12 AWG UNLESS INDICATED OTHERWISE ON PLANS.
 - (1) WHERE THE DRAWINGS ALLOW USE OF ALUMINUM CONDUCTORS THEY SHALL BE AA-8000 SERIES ALLOY COMPACT STRANDED TYPE. TERMINATIONS SHALL BE MADE USING NOLOX ANTI-OXIDANT COMPOUND.
 - B. TYPE THWN OR XHHW (90°C) INSULATED STRANDED COPPER CONDUCTORS SHALL BE USED WHERE BRANCH CIRCUIT CONDUCTORS ARE ROUTED THRU EXISTING SLEEVES, INSERTS, AND HANGERS.
 - C. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL BID DOCUMENTS, THE ELECTRICAL CONTRACTOR SHALL NOT INSTALL TYPE AC ARMORED CABLE, TYPE FC PLAT CABLE, TYPE FCC PLAT CONDUCTOR CABLE, TYPES NM / NM-C / NMS NONMETALLIC SHEATHED CABLE, TYPES SE / USE SERVICE CABLE OR TYPE UP EXISTING CABLES TO BE REPLACED WITH NEW CABLE.
 - D. FEEDER CONDUCTORS SHALL BE ROUTED CONTINUOUS FROM ORIGIN TO DESTINATION, WITHOUT SPLICING, UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS. FEEDER CONDUCTORS SHALL BE PULLED WITH THE USE OF AN APPROVED PULLING COMPOUND OR POWDER.
 - E. "VFD RATED" MULTI-CONDUCTOR SHIELDED CABLES SHALL BE TERMINATED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. BRAIDED SHIELDS SHALL BE PULLED THROUGH WHERE NECESSARY AND SHALL BE ADDED TO THE CONDUIT BETWEEN THE VFD AND MOTOR. PHASE AND GROUND CONDUCTORS SHALL BE PULLED THROUGH BRAIDED SHIELDS AT EACH END AND TERMINATED TOGETHER WITH THE GROUND CONDUCTORS.
 - F. METAL CLAD CABLE (NCC TYPE MC):
 - (a) METAL CLAD CABLE (MC CABLE) MAY NOT BE USED WHERE PERMITTED BY THE NEC, LOCAL CODES AND THE FOLLOWING LIMITATIONS.
 - (1) FOR BRANCH CIRCUIT WIRING SHALL BE LIMITED TO EXISTING WALLS OR INACCESSIBLE CEILINGS AND IN CASEWORK. (MC CABLE SHALL NOT BE INSTALLED ABOVE CEILINGS IN LENGTHS GREATER THAN 8 FEET).
 - (2) FOR LIGHTING, RECEPTACLE AND EQUIPMENT BRANCH CIRCUIT WIRING WITH-IN A ROOM, WHERE CONCEALED IN WALLS AND ABOVE FINISHED CEILINGS, ALL ASSOCIATED "HOLE" RUN WIRING SHALL BE INSTALLED IN CONDUIT.
 - (3) MC CABLE SHALL NOT BE INSTALLED EXPOSED ON WALLS.
 - (4) MC CABLE IS NOT PERMITTED FOR FEEDER CIRCUITS.
 - (5) MC CABLE IS NOT PERMITTED FOR EMERGENCY POWER CIRCUITS, EXCEPT WHERE FISHERD INTO EXISTING WALLS OR INACCESSIBLE CEILINGS.
 - (6) UNGROUNDED CONDUCTORS SHALL BE IDENTIFIED PER NEC 210.5.4.
 - (2) MC CABLE SHALL BE UL LISTED FOR ITS USE. WHERE MC CABLE IS INSTALLED IN HEALTHCARE FACILITIES (AS DEFINED BY THE NEC), THE CABLE ASSEMBLY SHALL BE LISTED FOR USE BEFORE BELOW THE FOLLOWING LIMITATIONS:
 - (1) IN-LINE CONNECTORS FOR 600V COPPER CONDUCTORS #6 AWG THRU #3 AWG SHALL BE ILSCD TYPE "CTL" CIRCUMFERENTIAL COMPRESSION SLEEVES OR EQUAL BY T & B OR BUCHANAN.
 - (2) IN-LINE CONNECTORS FOR 600V COPPER CONDUCTORS #2 AWG OR LARGER SHALL BE EXTRA LONG BARREL ILSCD TYPE "CTL" COMPRESSION SLEEVES (OR EQUAL BY T & B OR BUCHANAN) WITH 3M BRAND "PSI" SILICONE GLOD SHRINK INSULATORS.
 - I. CIRCUIT CONDUCTORS SHALL BE CONNECTED AT PANELBOARDS AS INDICATED ON THE DRAWINGS. PANELBOARD LOADS SHALL BE CHECKED AT COMPLETION OF THE JOB AND ADJUSTMENTS OR NAMEPLATES SHALL BE INSTALLED ON THE PANELBOARD.
 - J. ALL MULTI-WIRE BRANCH CIRCUITS THAT FEED MORE THAN ONE DEVICE OR EQUIPMENT MOUNTED ON, OR WIRED FROM, A COMMON WYE, SHALL BE POWERED FROM A BRANCH CIRCUIT OVERCURRENT DEVICE THAT SIMULTANEOUSLY DISCONNECTS ALL UNGROUNDED SUPPLY CONDUCTORS IN FULL COMPLIANCE WITH ARTICLE 210.4.
 - K. EACH FEEDER AND BRANCH CIRCUIT ASSOCIATED WITH A TWO-POLE OR THREE-POLE PROTECTIVE DEVICE SHALL BE PROVIDED WITH A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. THE REQUIRED EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED AS SHOWN ON THE DRAWINGS. SHALL NOT BE SMALLER THAN SHOWN IN NEC TABLE 250.122, AND SHALL BE INSTALLED IN A COMMON CONDUIT WITH THE RELATED PHASE AND NEUTRAL CONDUCTORS. IN THE CASE OF PARALLEL FEEDERS, EACH RACEWAY SHALL HAVE A FULL SIZE GREEN INSULATED EQUIPMENT GROUND CONDUCTOR.
 - L. BRANCH CIRCUIT CONDUCTORS SHALL BE COLOR CODED. CONDUCTOR INSULATION SHALL BE FACTORY COLORED IN SIZES UP DISTRIBUTION #8 AWG. COLORS SHALL BE ASSIGNED TO EACH CONDUCTOR OR CABLE AS SHOWN IN THE FOLLOWING TABLE AND CARRIED THROUGHOUT ALL MAIN AND BRANCH CIRCUIT DISTRIBUTION.

	208/240 VOLT	480/277 VOLT
(1) PHASE "A" CONDUCTOR	BLACK	BROWN
(2) PHASE "B" CONDUCTOR	RED	ORANGE
(3) PHASE "C" CONDUCTOR	BLUE	YELLOW
(4) NEUTRAL CONDUCTOR	WHITE	GRAY
(5) GROUNDING CONDUCTOR	GREEN	GREEN

 - (6) ISOLATED GROUNDING CONDUCTOR GREEN WITH YELLOW STRIPE
 - M. IN GENERAL, 120V AND 277V SINGLE PHASE CIRCUITS SHALL BE PROVIDED WITH DEDICATED NEUTRALS AND CONNECTED TO SINGLE POLE BREAKERS.
 - N. CIRCUITS INSTALLED FOR MODULAR TYPE FURNITURE SHALL BE CONNECTED TO A SINGLE-POLE BREAKER WITH A DEDICATED NEUTRAL, WITHOUT EXCEPTION.
 - O. WHERE MORE THAN ONE NOMINAL VOLTAGE SYSTEM IS PRESENT WITHIN A PREMISES, THE IDENTIFICATION USED FOR EACH PHASE, NEUTRAL, AND GROUND CONDUCTORS SHALL BE PERMANENTLY POSTED AT EACH DISTRIBUTION PANEL AND AT EACH BRANCH PANEL.
 - P. CONTROL WIRING SHALL BE COLOR CODED SUCH THAT RED IS USED EXCLUSIVELY FOR ALL 120 VOLT CONDUCTORS AND WHITE FOR ALL NEUTRAL CONDUCTORS. ALL CONTROL WIRING TO BE IDENTIFIED AT BOTH ENDS WITH PERMANENT WIRE MARKERS.
- OUTLET BOXES
 - A. CONCEALED OUTLET BOXES FOR LIGHTING FIXTURES IN SUSPENDED CEILING AREAS SHALL BE 4" OCTAGON BY 1-1/2" DEEP. WHERE NUMBER OF WIRES REQUIRES A LARGER BOX, USE 4-11/16" OR 4" SQUARE BY 2-1/8" DEEP. BOXES SHALL BE PROVIDED WITH HANG OPENING PLASTER COVERS TO FINISH FLUSH WITH CEILING. PROVIDE ONE OR TWO SANG ADAPTERS AS REQUIRED. TO FINISH FLUSH WITH WALL, WHERE THREE OR MORE DEVICES ARE SET AT ONE POINT, USE GANGE TYPE BOXES.
 - B. OUTLET BOXES LOCATED ABOVE ACCESSIBLE CEILINGS FOR LIGHTING FIXTURES SHALL BE PROVIDED WITH BLANK COVERS. WIRING SHALL BE EXTENDED TO CIRCULATES IN FLEXIBLE METAL CONDUIT WITH GROUND WIRE.
 - C. OUTLET BOXES FOR WIRING DEVICES SHALL BE 4" SQUARE BY 1-1/2" DEEP. WHERE NUMBER OF WIRES REQUIRES A LARGER BOX, USE 4" SQUARE BY 2-1/8" DEEP. PROVIDE ONE OR TWO SANG ADAPTERS AS REQUIRED. TO FINISH FLUSH WITH WALL, WHERE THREE OR MORE DEVICES ARE SET AT ONE POINT, USE GANGE TYPE BOXES.
 - D. JUNCTION BOXES SHALL BE BONDED TO THE EQUIPMENT GROUND CONDUCTORS CONTAINED WITHIN, WHENEVER SAID CONDUCTORS ARE "SPliced" OR "TERMINATED" WITHIN THE BOX, IN FULL COMPLIANCE WITH NEC ARTICLE 250.148.
 - E. ALL BOXES SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE INDEPENDENT OF THE CONDUIT SYSTEM.
 - F. ELECTRICAL CONTRACTOR SHALL PROVIDE PRE-PAINTED RED, SPRAY PAINTED RED, OR RED COLORED STICK-ON LABELS FOR ALL FIRE ALARM SYSTEM JUNCTION BOXES AND COVERS.
- WIRING DEVICES AND COVERSPLATES
 - A. WIRING DEVICES SHALL BE FURNISHED AS DESCRIBED IN THE SYMBOL, SCHEDULE AND INSTALLED AT LOCATIONS SHOWN ON THE DRAWINGS. WIRING DEVICES TO BE COOPER "INDUSTRIAL SPEC GRADE", HUBBELL "H" SERIES, LEVITON "LEV-SPEC", OR PASS & SEYMOUR "INDUSTRIAL SPEC GRADE".
 - (1) DEVICES SHALL HAVE ONE-PIECE BRASS MOUNTING STRIP.
 - (2) DEVICES SHALL BE "TOVRY" IN COLOR UNLESS INDICATED OTHERWISE ON PLANS.
 - B. COVERSPLATES FOR FLUSH MOUNTED AND SURFACE MOUNTED DEVICES IN WIREMOLD BOXES SHALL BE .04" THICK BRUSHED FINISH, STAINLESS STEEL. WHERE TWO OR MORE DEVICES ARE SET AT ONE POINT, THEY SHALL BE COVERED WITH A COMMON PLATE.
 - C. COVERSPLATES FOR DEVICES SHALL BE SMOOTH IVORY COLORED NYLON NON-BREAKABLE TYPE. WHERE TWO OR MORE DEVICES ARE SET AT ONE POINT, THEY SHALL BE COVERED WITH A COMMON PLATE.
 - D. WHERE DECORATIVE SCREW-LESS COVERSPLATE SWITCHES OR DIMMERS ARE LOCATED ADJACENT TO STANDARD TOGGLE SWITCHES THEY SHALL BE INSTALLED IN SEPARATE BOXES.
 - E. COVERSPLATES FOR SURFACE MOUNTED DEVICES IN CAST FS BOXES SHALL BE HEAVY-GAUGE GALVANIZED STAMPED SHEET STEEL, CROUSE HINDS TYPE "DS" OR EQUIV. TYPE "YSK".
- LIGHTING
 - A. FURNISH AND INSTALL LIGHTING FIXTURES AND LAMPS AS INDICATED IN THE FIXTURE SCHEDULE ON THE DRAWINGS. LAMPS SHALL BE BY GENERAL ELECTRIC, OSRAM/SYLVANIA, OR PHILIPS LIGHTING.
 - B. FURNISH AND INSTALL ALL REQUIRED HANGING ACCESSORIES AND FITTINGS TO ENSURE PROPER INSTALLATION AND CONFORMANCE WITH THE CODE.
 - (1) ALL FIXTURE SUPPORTS SHALL BE CAPABLE OF SUPPORTING THE FIXTURE PLUS 100% ADDITIONAL WEIGHT.
 - (2) THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SPECIAL NOTE OF THE VARIOUS TYPES OF CEILING CONSTRUCTION USED THROUGHOUT THE BUILDING SO THAT PROPER MOUNTING ARRANGEMENTS ARE MADE FOR LIGHTING FIXTURES.
 - (3) SURFACE TYPE FIXTURES WHICH MOUNT ON CEILING SHALL BE SUPPORTED FROM METAL SUPPORTING MEMBERS (FURNISHED BY THE ELECTRICAL CONTRACTOR) LOCATED ABOVE GRID CEILING.
 - C. FIXTURES AND FRAMES SHALL BE GROUNDING TO THE CONDUIT SYSTEM EITHER THROUGH THE HANGING DEVICE OR BY MEANS OF A #14 GREEN JUMPER.
 - D. GENERAL:
 - (1) LUMINAIRE MANUFACTURER SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN THE MANUFACTURE AND DESIGN OF LED PRODUCTS AND SYSTEMS AND NO LESS THAN ONE HUNDRED (100) NORTH AMERICAN INSTALLATIONS.
 - (2) UNLESS OTHERWISE SPECIFIED, ALL LED LUMINAIRES AND POWER/DATA SUPPLIES SHALL BE PROVIDED BY A SINGLE MANUFACTURER TO ENSURE COMPATIBILITY.
 - (3) ALL COMPONENTS, PERIPHERAL DEVICES AND CONTROL SOFTWARE ARE TO BE PROVIDED BY AND SHALL BE THE RESPONSIBILITY OF A SINGLE ENTITY. ALL COMPONENTS SHALL PERFORM SUCCESSFULLY AS A COMPLETE SYSTEM AND SHALL OPERATE AS DESCRIBED ON THE DRAWINGS.
 - (4) INCLUDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION. PROVIDE ALL POWER SUPPLIES, SYNCHRONIZERS, DATA CABLES, AND DATA TERMINATORS FOR A COMPLETE WIRING SYSTEM.
 - (5) ALL LED SOURCES USED IN THE LED LUMINAIRE SHALL BE OF PROVEN QUALITY FROM ESTABLISHED AND REPUTABLE LED MANUFACTURERS AND SHALL HAVE BEEN FABRICATED AFTER 2007.
 - (6) INCLUDE ALL SOURCES USED IN THE LED LUMINAIRE SHALL BE OF PROVEN QUALITY FROM ESTABLISHED AND REPUTABLE LED MANUFACTURERS AND SHALL HAVE BEEN FABRICATED AFTER 2007.
 - E. LIGHTING/RECEPTACLE CONTROL PANEL SHALL HAVE QUANTITY OF PROGRAMMABLE RELAYS AS IDENTIFIED ON DRAWINGS. NEMA-1 SURFACE MOUNTED ENCLOSURE AND DIGITAL TIME CLOCK, NIGHT A/RP OR APPROVED EQUAL.
 - F. WARRANTY:
 - (1) SYSTEM SHALL CARRY A FULL WARRANTY FOR FIVE (5) YEARS. MANUFACTURER SHALL BE RESPONSIBLE FOR COST OF SHIPPING AND LABOR TO REPLACE ANY COMPONENT OF THE SYSTEM THAT FAILS WITHIN 2 YEARS OF INSTALLATION.
 - G. PRODUCTS AND COMPONENTS - PERFORMANCE
 - (1) LED LUMINAIRES AND COMPONENTS SHALL BE UL LISTED OR UL CLASSIFIED.
 - (2) ALL LED COMPONENTS SHALL BE RESTRICTION OF HAZARDOUS SUBSTANCE DIRECTIVE (ROHS) COMPLIANT.
 - (3) WHITE LEDS SHALL HAVE A RATED SOURCE LIFE OF 50,000 HOURS UNDER NORMAL OPERATING CONDITIONS. ROHS LEDS SHALL HAVE A RATED SOURCE LIFE OF 50,000 HOURS. LED "RATED SOURCE LIFE" IS DEFINED AS THE TIME WHEN A MINIMUM OF 70% OF INITIAL LUMEN OUTPUT REMAINS.
 - (4) LUMINAIRE ASSEMBLY SHALL INCLUDE A METHOD OF DISSIPATING HEAT SO AS TO NOT DEGRADE LIFE OF SOURCE, ELECTRONIC EQUIPMENT, OR LENSES. LED LUMINAIRE HOUSING SHALL BE DESIGNED TO TRANSFER HEAT FROM THE LED BOARD TO THE OUTSIDE ENVIRONMENT. LUMINAIRE HOUSING SHALL HAVE NO NEGATIVE IMPACTS ON THE LIFE OF COMPONENTS.
 - (5) LEDS SHALL BE ADEQUATELY PROTECTED FROM MOISTURE OR DUST IN INTERIOR APPLICATIONS.
 - (6) ALL HARDWIRED CONNECTIONS TO LED LUMINAIRES SHALL BE REVERSE POLARITY PROTECTED AND PROVIDE HIGH VOLTAGE PROTECTION IN THE EVENT CONNECTIONS ARE REVERSED OR SHORTED DURING THE INSTALLATION PROCESS.
 - (7) THE LED LUMINAIRE SHALL BE INSTALLED AT CONSTANT AND CAREFULLY REGULATED CURRENT LEVELS. LEDS SHALL NOT BE OVERDRIVEN BEYOND THEIR SPECIFIED NOMINAL VOLTAGE AND CURRENT.
- LIGHTING CONTROLS
 - A. THE CONTRACTOR SHALL REVIEW THE PROPOSED LIGHTING CONTROLS WITH THE MANUFACTURERS TECHNICIAN AND PROCURE FACTORY ONE-LINES. INCLUDE FACTORY ONE-LINES IN LIGHTING CONTROL SHOP DRAWING SUBMITTALS.
 - B. THE CONTRACTOR SHALL PROVIDE A QUALIFIED TECHNICIAN TO PERFORM ALL PROGRAMMING, STARTUP, CALIBRATION, AND CERTIFICATION OF THE LIGHTING CONTROL SYSTEM.
 - C. ALL SYSTEM PROGRAMMING SHALL BE REVIEWED AND APPROVED BY THE OWNER IN ADVANCE. AN OWNER'S REPRESENTATIVE SHALL BE PRESENT THROUGHOUT THE PROGRAMMING AND TESTING OF THE LIGHTING CONTROL SYSTEM.
 - D. THE CONTRACTOR SHALL PROVIDE LABOR TO PROGRAM EACH OCCUPANCY SENSOR AND DAYLIGHT SENSOR AS NECESSARY FOR INTERFACE WITH THE SYSTEM.
 - E. WHERE ROOMS ARE DIVIDED WITH OPERABLE PARTITIONS, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A SYSTEM WITH AN OPTICAL PARTITION SWITCH TO ALLOW INDIVIDUAL ROOM CONTROLS WHEN THE PARTITION IS CLOSED AND COMMON ROOM CONTROLS WHEN THE PARTITION IS OPEN.
- MECHANICAL EQUIPMENT WIRING
 - A. FURNISH AND INSTALL POWER WIRING TO ALL HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT. CHECK HEATING AND VENTILATING DRAWINGS TO ENSURE ALL MECHANICAL EQUIPMENT HAS THE REQUIRED ELECTRICAL AND MECHANICAL ROUGH-IN CONDITIONS.
 - B. ALL TEMPERATURE CONTROL WIRING SHALL BE FURNISHED AND INSTALLED BY MECHANICAL TRADES UNDER SEPARATE CONTRACT UNLESS OTHERWISE SHOWN ON THE ELECTRICAL PLANS.
 - C. MOTOR STARTERS SHALL BE PROVIDED INTERNALLY TO THE HVAC EQUIPMENT EXCEPT WHERE OTHERWISE NOTED ON THE ELECTRICAL DRAWINGS.
 - D. ALL MOTORS SHALL BE GROUNDING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS. DISCONNECT MEANS SHALL BE SUPPLIED AS REQUIRED TO SATISFY THE CODE REQUIREMENTS.
 - E. CONNECTIONS TO MOTORS SHALL BE MADE WITH A SHORT LENGTH (24" MINIMUM) OF LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT.
- LOAD BALANCE AND ADJUSTMENT
 - A. THIS CONTRACTOR SHALL PROVIDE PERSONNEL AND EQUIPMENT TO CHECK LOADS AND ADJUST AS REQUIRED TO ENSURE THAT CONNECTED LOADS ARE BALANCED AS NEARLY AS POSSIBLE BETWEEN PHASES ON ALL FEEDERS.
 - B. SPECIAL CARE SHALL BE TAKEN DURING LOAD BALANCE TO ASSURE THAT REVERSE ROTATION OF MOTORS IS NOT CAUSED.
- GROUNDING
 - A. FURNISH AND INSTALL GROUND CONDUCTORS AS INDICATED ON THE DRAWINGS. CONDUCTORS SHALL BE INSULATED COPPER, TYPE THWN, IDENTIFIED GREEN, AND SIZED AS SHOWN ON THE DRAWINGS.
 - B. METALLIC CONDUIT SYSTEMS SHALL BE ELECTRICAL CONTINUOUS THROUGHOUT.
 - C. EACH FEEDER AND BRANCH CIRCUIT ASSOCIATED WITH A TWO-POLE OR THREE-POLE PROTECTIVE DEVICE SHALL BE PROVIDED WITH A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. THE REQUIRED EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED AS SHOWN ON THE DRAWINGS. SHALL NOT BE SMALLER THAN SHOWN IN NEC TABLE 250.122, AND SHALL BE INSTALLED IN A COMMON CONDUIT WITH THE RELATED PHASE AND